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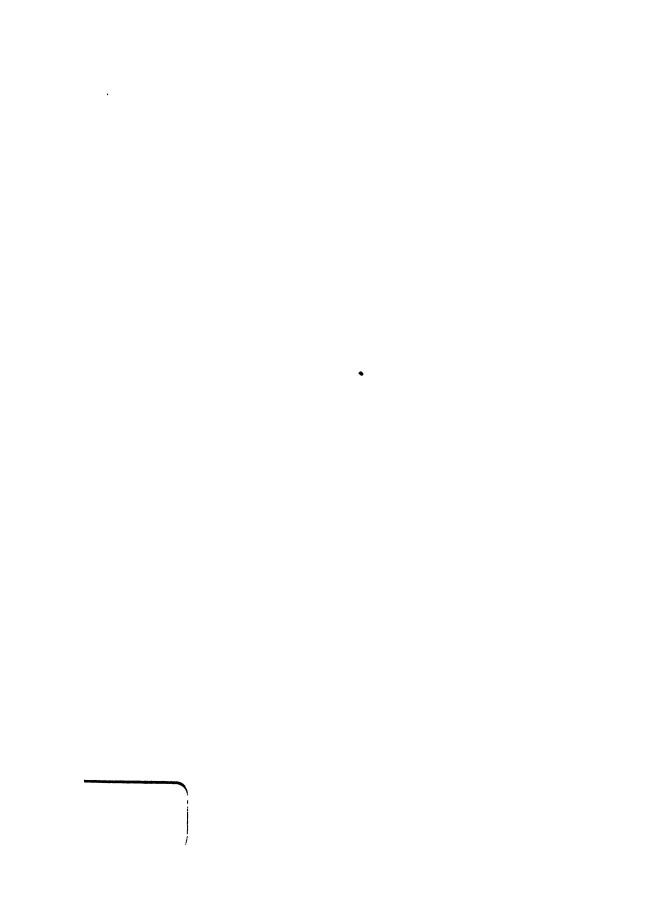
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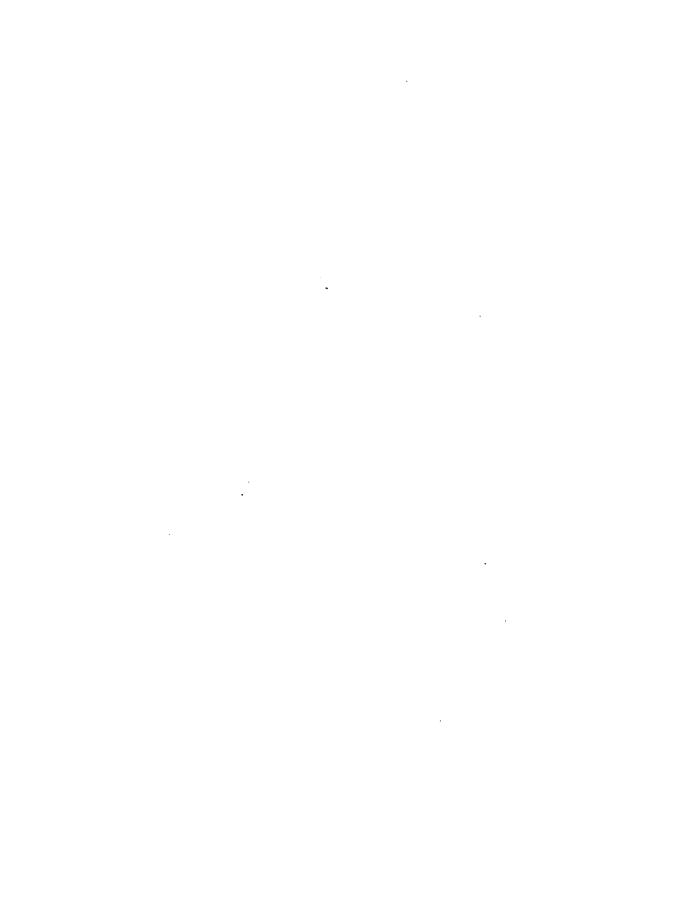
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## HAND-BOOK

OF

# METEOROLOGICAL TABLES

ВХ

## HENRY ALLEN HAZEN, A. M.,

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NEW YORK:
N. D. C. HODGES, Publisher,
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#### PREFACE.

The only complete collection of meteorological tables is that of Guyot, first published by the Smithsonian Institution in 1852. This has been enlarged in successive revisions until the 212 pages of the original work have grown to 738 in the fourth edition, forming a very valuable compilation of all the more important meteorological and physical tables in use since 1850. This last edition leaves nothing to be desired from a historical stand-point, but the working meteorologist still lacks a collection of the best tables, in compact form, convenient for use, and at small cost. The tables now presented have been in constant use by the author, and their present form is the result of many years' experience in the application of various tables. They are published, not to supersede the earlier and more extended collection, but as a convenient hand-book.

In the general plan of the work, the main points to be noted are as follows:

- 1. As far as possible, all tables relating to the same subject are placed together.
- 2. All similar tables are united. Thus, the three tables for converting millimetres to inches, on pp. 200, 225 and 258 of Guyot<sup>1</sup> form Table XXXII of this collection. In addition to compactness and ease of reference, this gives a table for all conversions needed, while previously there has been published no single table that will convert barometrical observations at the highest stations, e. g. Pike's Peak.
- 3. Only one table is given for each computation. For barometric hypsometry, in place of Guyot's seven tables in both English and French measures, only one is given in each, the best and most convenient, as found by six year's constant use of various tables.
  - 4. Only tables needed for current meteorological work are included.

<sup>&</sup>lt;sup>1</sup>All references to Guyot are to 4th ed., Wash., 1884.

Thus, tables for converting Reaumur temperatures, Russian half lines, etc., are omitted, because needed to-day only for the reduction of old observations, and this rare use can well be supplied by Guyot.

- 5. The latest determination of the metre is used in all linear tables. The old length of the metre, 39.37079 in., has been used thus far, in all tables in this country and abroad, the usual argument being the inadvisability of a change previous to an authoritative determination. But the length of the metre is now known so closely that the outstanding correction can affect none of the values in our tables, while the old length, when the tables are carried to .001 in. (25 mm.), introduces a nearly constant error of 2004 in. The length adopted is 39.3702 in., for which determination I am indebted to Professor W. A. Rogers, of Bowdoin College, who is confident that the true value lies between 39.37015 and 39.3702 in. An error of .0001 is hardly possible, and as the change of .0006 from the old value makes a change of only .001 in. in the conversion, it is clear that any possible outstanding error is far within the tabular values. A table computed on the new length will require no modification in the future.
- 6. Several new tables are introduced. At the head of each table, or in its introduction, the authority is stated. If the table be new, i. e., recomputed or never before published in this form, it is marked ("Original"); if copied or enlarged from Guyot or any other author, the source is given.
- 7. At the end of the volume are given plates showing the distribution of the more important meteorological elements for the United States.

I gratefully acknowledge the great assistance rendered me by Mr. C. J. Sawyer in the final arrangement of the hand-book.

H. A. HAZEN.

Washington, D. C., August 7, 1888.

## CONTENTS.

m		
TEMPERATURE	Tables. 1-9.	AGE.
I.	Conversion of readings F. into C.,	1
II.		6
· III.	Readings C. and F. near the boiling point,	8
IV.	Degrees $F. = degrees C.$ ,	8
v.	C	8
VI.	Intensity of solar radiation,	9
VII.	Temperature of ascending saturated air,	9
PRESSURE TAR	BLES. 10-47.	
VIII.	Barometric readings reduced to freezing. English,	10
IX.	Metrical,	16
X.	Barometric determination of height. English,	20
XI.	Metrical,	3()
XII.	Barometer readings reduced to sea level. English,	33
XIIa	Column of air equal to .1 inch in the barometer,	41
XII <sub>b.</sub>	Column of air equal to 1 millimeter in the barometer,	41
XIII.	Barometer readings reduced to sea-level. Metrical,	42
XIV.	Gravity correction,	46
XV.	Pressures corresponding to the boiling point. English, .	47
XVI.	Metrical,	47
HUMIDITY TA	BLES. 48-73.	
XVII.	Vapor pressure. English,	48
XVIII.	Metrical,	52
XIX.	Decrease with altitude,	53
XX.	Weight of vapor. English,	<b>54</b>
XXI.	Metrical,	55
	Dew-point and relative humidity. Temperature F.,	56
XXIII.		71
WIND TABLES	. 74–81.	
XXIV.	Lambert's formula,	74
XXV.	Conversion of wind velocities. Miles = metres, feet, kilometers,	78
	Metres = miles.	79

CONTENTS.	vi

,

	. CONTENTS.	vi
XXVII.	Wind velocity and pressure. Miles = pounds per square for	PAGE. t. 80
	Beaufort scale,	
	Estimation of wind velocity,	
	Estimation of thunder-storm intensity,	
LINEAR TABLI		. 01
	Inches to millimetres,	00 00
	Millimetres to inches,	90-97
	· · · · · · · · · · · · · · · · · · ·	98-105
	Miles to kilometres,	
	Statute to nautical miles,	
XXXVI.	Length of a degree,	. 109
Miscelianeou	JS TABLES. 110–126.	
XXXVII.	Sun-spot numbers,	110–111
XXXVIII.	Local to standard time, ,	. 112
XXXIX.	Time of sunrise,	113
XL.	To determine the position of a point on a map,	14–115
XLI.	Dividing by 29,	16–117
XLII.	28,	. 118
XLIII.	31,	119
XLIV.	Normal pressure and temperature. U.S.,	120–123
XLV.	Mean wind direction. U.S.,	124–126
NORMALS FOR	THE UNITED STATES.	
Plate I.	January,	. 127
IT	Inly	197



TABLES.

## I-VII. TEMPERATURE TABLES.

TABLE I.-CONVERSION OF READING'S F. INTO C.

(Enlarged from Guyot, p. 13).

F.	.0	.1	2	.8	.4	.5	.6	.7	.8	.9	<b>F.</b>
180 129 128 127 126	C. 54.44 53.89 53.33 52.78 52.22	C. 54.50 53.94 53.39 52.83 52.28	C. 54.56 54.00 53.44 52.89 52.33	C. 54.61 54.06 53.50 52.94 52.39	C. 54.67 54.11 53.56 53.00 52.44	C. 54.72 54.17 53.61 53.06 52.50	C. 54.78 54.22 53.67 53.11 52.56	C. 54.83 54.28 53.72 53.17 52.61	C. 54.89 54.33 53.78 53.22 52.67	C. 54.94 54.39 53.83 53.28 52.72	180 129 128 127 126
125	51.67	51.72	51.78	51.83	51.89	51.94	52.00	$51.50 \\ 50.94$	52.11	52.17	125
124	51.11	51.17	51.22	51.28	51.33	51.39	51.44		51.56	51.61	124
128	50.56	50.61	50.67	50.72	50.78	50.83	50.89		51.00	51.06	128
122	50.00	50.06	50.11	50.17	50.22	50.28	50.33		50.44	50.50	122
121	49.44	49.50	49.56	49.61	49.67	49.72	49.78		49.89	49.94	121
120 119 118 117 116	48.89 48.33 47.78 47.22 46.67		49.00 48.44 47.89 47.33 46.78	48.50 47.94 47.39	49.11 48.56 48.00 47.44 46.89	48.06	49.22   48.67   48.11   47.56   47.00		49.33 48.78 48.22 47.67 47.11	49.39 48.83 48.28 47.72 47.17	120 119 118 117 116
115	46.11	46.17	46.22	46.28	46.38	46.39	46.44	46.50	46.56	46.61	115
114	45.56	45.61	45.67	45.72	45.78	45.83	45.89	45.94	46.00	46.06	114
118	45.00	45.06	45.11	45.17	45.22	45.28	45.33	45.39	45.44	45.50	118
112	44.44	44.50	44.56	44.61	44.67	44.72	44.78	44.83	44.89	44.94	112
111	43.89	43.94	44.00	44.06	44.11	44.17	44.22	44.28	44.33	44.39	111
110	43,33	43.39	43.44	43.50	43.56	43.61	43.67 $43.11$ $42.56$ $42.00$ $41.44$	43.72	43.78	43.83	110
109	42.78	42.83	42.89	42.94	43.00	43.06		43.17	43.22	43.28	109
108	42.22	42.28	42.33	42.39	42.44	42.50		42.61	42.67	42.72	108
107	41.67	41.72	41.78	41.83	41.89	41.94		42.06	42.11	42.17	107
106	41.11	41.17	41.22	41.28	41.33	41.39		41.50	41.56	41.61	106
105	40.56	40.61	40.67	40.72	40.78	40.83	40.89	40.94	41.00	41.06	105
104	40.00	40.06	40.11	40.17	40.22	40.28	40.33	40.39	40.44	40.50	104
103	39.44	39.50	39.56	39.61	39.67	39.72	39.78	39.83	39.89	39.94	103
102	38.89	38.94	39.00	39.06	39.11	39.17	39.22	39.28	39.33	39.39	102
101	38.33	38.39	38.44	38.50	38.56	38.61	38.67	38.72	38.78	38.83	101
100	37.78	37.83	37.89	37.94	38.00	38.06	38.11	38.17	38.22	38.28	100 1
99	37.22	37.28	37.33	37.39	37.44	37.50	37.56	37.61	37.67	37.72	99
98	36.67	36.72	36.78	36.83	36.89	36.94	37.00	37.06	37.11	37.17	98
97	36.11	36.17	36.22	36.28	36.33	36.39	36.44	36.50	36.56	36.61	97
96	35.56	35.61	35.67	35.72	35.78	35.83	35.89	35.94	36.00	36.06	96
95	35.00	35.06	35.11	35.17	35.22	35.28	35.33	35.39	35,44	35.50	95
94	34.44	34.50	34.56	34.61	34.67	34.72	34.78	34.83	34,89	34.94	94
93	33.89	33.94	34.00	34.06	34.11	34.17	34.22	34.28	34,33	34.39	98
92	33.33	33.39	33.44	33.50	33.56	33.61	33.67	33.72	33,78	33.83	92
91	32.78	32.83	32.89	32.94	33.00	33.06	33.11	33.17	33,22	33.28	91
90 89 88 87 86	32.22 31.67 31.11 30.56 30.00	32.28 31.72 31.17 30.61 30.06	32.33 31.78 31.22 30.67 30.11	32.39 31.83 31.28 30.72 30.17	32.44 31.89 31.33 30.78 30.22	32.50 31.94 31.39 30.83 30.28	32.56 $32.00$ $31.44$ $30.89$ $30.33$	32.61 $32.06$ $31.50$ $30.94$ $30.39$	32.67 32.11 31.56 31.00 30.44	32.72 32.17 31.61 31.06 30.50	90 89 88 87 86
85	29.44	29.50	29.56	29.61	29.67	29.72	29.78	29.83	29.89	29.94	85
84	28.89	28.94	29.00	29.06	29.11	29.17	29.22	29.28	29.33	29.39	84
88	28.33	28.39	28.44	28.50	28.56	28.61	28.67	28.72	28.78	28.83	83
82	27.78	27.83	27.89	27.94	28.00	28.06	28.11	28.17	28.22	28.28	82
81	27.22	27.28	27.33	27.39	27.44	27.50	27.56	27.61	27.67	27.72	81
80	26.67	26.72	26.78	26.83	26.89	26.94	27.00	27.06	27.11	27.17	80
	.0	•1	.2	.8	.4	.5	6	.7	.8	.9	

I.-READINGS F. INTO C.

F.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	F.
80 79 78 77 76	C. 26.67 26.11 25.56 25.00 24.44	C. 26.72 26.17 25.61 25.06 24.50	C. 26.78 26.22 25.67 25.11 24.56	C. 26.83 26.28 25.72 25.17 24.61	C. 26.89 26.33 25.78 25.22 24.67	C. 26.94 26.39 25.83 25.28 24.72	C. 27.00 26.44 25.89 25.33 24.78	C. 27.06 26.50 25.94 25.39 24.83	C. 27.11 26.56 26.00 25.44 24.89	C. 27.17 26.61 26.06 25.50 24.94	80 79 78 77 76
75	23.89	23.94	24.00	24.06	24.11	24.17	24.22	24.28	24.33	24.39	75
74	23.33	23.39	23.44	23.50	23.56	23.61	23.67	23.72	23.78	23.83	74
78	22.78	22.83	22.89	22.94	23.00	23.06	23.11	23.17	23.22	23.28	78
72	22.22	22.28	22.33	22.39	22.44	22.50	22.56	22.61	22.67	22.72	72
71	21.67	21.72	21.78	21.83	21.89	21.94	22.00	22.06	22.11	22.17	71
66	21.11 $20.56$ $20.00$ $19.44$ $18.89$	21.17 $20.61$ $20.06$ $19.50$ $18.94$	21.22 20.67 20.11 19.56 19.00	21.28 20.72 20.17 19.61 19.06	21.33 20.78 20.22 19.67 19.11	21.39 20.83 20.28 19.72 19.17	21.44 20.89 20.33 19.78 19.22	21.50 20.94 20.39 19.83 19.28	21.56 21.00 20.44 19.89 19.33	21.61 21.06 20.50 19.94 19.39	70 69 68 67 66
65	18.33	18.39	18.44	18.50	18.56	18.61	18.67	18.72	18.78	18.83	65
64	17.78	17.83	17.89	17.94	18.00	18.06	18.11	18.17	18.22	18.28	64
63	17.22	17.28	17.33	17.39	17.44	17.50	17.56	17.61	17.67	17.72	68
62	16.67	16.72	16.78	16.83	16.89	16.94	17.00	17.06	17.11	17.17	62
61	16.11	16.17	16.22	16.28	16.33	16.39	16.44	16.50	16.56	16.61	61
60	15.56	15.61	15.67	15.72		15.83	15.89	15.94	16.00	16.06	60
59	15.00	15.06	15.11	15.17		15.28	15.33	15.39	15.44	15.50	59
58	14.44	14.50	14.56	14.61		14.72	14.78	14.83	14.89	14.94	58
57	13.89	13.94	14.00	14.06		14.17	14.22	14.28	14.33	14.39	57
56	13.33	13.39	13.44	13.50		13.61	13.67	13.72	13.78	13.83	56
55	12.78	12.83	12.89	12.94	13.00	13.06	13.11	13.17	13.22	13.28	55
54	12.22	12.28	12.33	12.39	12.44	12.50	12.56	12.61	12.67	12.72	54
58	11.67	11.72	11.78	11.83	11.89	11.94	12.00	12.06	12.11	12.17	58
52	11.11	11.17	11.22	11.28	11.33	11.39	11.44	11.50	11.56	11.61	52
51	10.56	10.61	10.67	10.72	10.78	10.83	10.89	10.94	11.00	11.06	51
50	10.00	10.06	10.11	10.17	$\begin{array}{c} 10.22 \\ 9.67 \\ 9.11 \\ 8.56 \\ 8.00 \end{array}$	10.28	10.33	10.39	10.44	10.50	50
49	9.44	9.50	9.56	9.61		9.72	9.78	9.83	9.89	9.94	49
48	8.89	8.94	9.00	9.06		9.17	9.22	9.28	9.33	9.39	48
47	8.33	8.39	8.44	8.50		8.61	8.67	8.72	8.78	8.83	47
46	7.78	7.83	7.89	7.94		8.06	8.11	8.17	8.22	8.28	46
45	7.22	7.28	7.33	7.39	7.44 $6.89$ $6.33$ $5.78$ $5.22$	7.50	7.56	7.61	7.67	7.72	45
44	6.67	6.72	6.78	6.83		6.94	7.00	7.06	7.11	7.17	44
43	6.11	6.17	6.22	6.28		6.39	6.44	6.50	6.56	6.61	43
42	5.56	5.61	5.67	5.72		5.83	5.89	5.94	6.00	6.06	42
41	5.00	5.06	5.11	5.17		5.28	5.33	5.39	5.44	5.50	41
40	4.44	4.50	4.56	4.61	$\frac{4.11}{3.56}$ $\frac{3.56}{3.00}$	4.72	4.78	4.83	4.89	4.94	40
89	3.89	3.94	4.00	4.06		4.17	4.22	4.28	4.33	4.39	39
38	3.33	3.39	3.44	3.50		3.61	3.67	3.72	3.78	3.83	38
87	2.78	2.83	2.89	2.94		3.06	3.11	3.17	3.22	3.28	37
86	2.22	2.28	2.33	2.39		2.50	2.56	2.61	2.67	2.72	36
35 34 33 32 31	$\begin{array}{c} 1.67 \\ 1.11 \\ 0.56 \\ 0.00 \\ -0.56 \end{array}$	$\begin{array}{c} 1.72 \\ 1.17 \\ 0.61 \\ 0.06 \\ -0.50 \end{array}$	1.78 1.22 0.67 0.11 -0.44		1.89 $1.33$ $0.78$ $0.22$ $-0.33$	1.94 1.39 0.83 0.28 -0.28	2.00 1.44 0.89 0.33 -0.22	2.06 1.50 0.94 0.39 -0.17	2.11 1.56 1.00 0.44 -0.11	2.17 1.61 1.06 0.50 -0.06	35 34 38 32 31
	-1.11 .0	-1.06	-1.00 . <b>2</b>	-0.94 -8	-0.89 - <b>4</b>	-0.83 - <b>5</b>	$\frac{-0.78}{.6}$	$\frac{-0.72}{3}$	-0.67 -8	-0.61	30

				IRE	ADING	S F. 11	NTO C.				
F.	0	-1	.2	.3	4	.3	.6	.7	.8	.9	F.
	C. - 1.11 - 1.67 - 2.22 - 2.78 - 3.33	C. - 1.06 - 1.61 - 2.17 - 2.72 - 3.28	12720	C, - 0.94 - 1.50 - 2.06 - 2.61 - 3.17	- 0.89 - 1.44 2.00 - 2.56 - 3.11	1.39 1.94 2.50	C. - 0.78 - 1.33 - 1.89 - 2.44 - 3.00	- 1.28	C. - 0.67 - 1.22 - 1.78 - 2.33 - 2.89	- 0.61 - 1.17 - 1.72 - 2.28 - 2.83	30 29 28 27 27
	- 4.44 - 5.00 - 5.56	- 3.83 - 4.39 - 4.94 - 5.50 - 6.06	- 3.78 - 4.33 - 4.89 - 5.44 - 6.00	- 3.72 - 4.28 - 4.83 - 5.39 - 5.94	- 3.67 - 4.22 - 4.78 - 5.33 - 5.89	- 4.17 - 4.72 - 5.28	- 3.56 - 4.11 - 4.67 - 5.22 - 5.78	- 4.06	- 3.44 - 4.00 - 4.56 - 5.11 - 5.67	- 3.39 - 3.94 - 4.50 - 5.06 - 5.61	26 24 28 29 21
17	- 7.22	6.61 - 7.17 - 7.72 - 8.28 - 8.83	7.11 7.67 8.22	- 8.17	- 7.00	- 7.50 - 8.06	- 6.89 - 7.44 - 8.00	- 7.39	- 7.33 - 7.89	- 6.17 - 6.72 - 7.28 - 7.83 - 8.39	20 19 18 17 16
15 14 13 12 11	$\begin{array}{c} -9.44 \\ -10.00 \\ -10.56 \\ -11.11 \\ -11.67 \end{array}$	-11.06	-10.44 $-11.00$	- 9.83	- 9.22 - 9.78 -10.33 -10.89 -11.44	- 9.72 -10.28 -10.83	- 9.67	- 9.06 - 9.61 -10.17 -10.72 -11.28	- 9.00 - 9.56 -10.11 -10.67 -11.22	- 8.94 - 9.50 -10.06 -10.61 -11.17	15 14 13 12 11
9	-12.22 -12.78 -13.33 -13.89 -14.44	-12.17 -12.72 -13.28 -13.83 -14.39	-12.11 -12.67 -13.22 -13.78 -14.33	-12.66 -12.61 -13.17 -13.72 -14.28	-12.00 -12.56 -13.11 -13.67 -14.22	-12.50 $-13.06$ $-13.61$	-11. <b>6</b> 9 -12.44 -13.00 -13.56 -14.11	-11.83 -12.39 -12.94 -13.50 -14.06	-11.78 -12.33 -12.89 -13.44 -14.00	-11.72 -12.28 -12.83 -13.39 -13.94	10 9 8 7 6
	$ \begin{array}{r} -15.00 \\ -15.56 \\ -16.11 \\ -16.67 \\ -17.22 \\ -17.78 \end{array} $	-14.94 -15.50 -16.06 -16.61 -17.17 -17.72	-15.44 $-16.00$	-14.83 -15.39 -15.94 -16.50 -1 <b>7</b> .06 -17.61	-14.78 -15.33 -15.89 -16.44 -17.00 -17.56	-15.28 $-15.83$ $-16.39$ $-16.94$	-14.67 -15.22 -15.78 -16.33 -16.89 -17.44	-14.61 -15.17 -15.72 -16.28 -16.83 -17.39	714.56 715.11 715.67 716.22 716.78 717.33	-14.50 -15.06 -15.61 -16.17 -16.72 -17.28	5 4 3 2 1 0
- 0 - 1 - 2 - 3	-17.78 $-18.33$ $-18.89$ $-19.44$	-17.83 -18.39 -18.94 -19.50	-17.89 -18.44 -19.00 -19.56	-17.94 -18.50 -19.06 -19.61	-18.00 -18.56 -19.11 -19.67	$-18.61 \\ -19.17$	-18.11 -18.67 -19.22 -19.78	-18.17 -18.72 -19.28 -19.83	_18.22 _18.78 _19.33 _19.89	-18.28 -18.83 -19.39 -19.94	- 0 - 1 - 2 - 3
- 4 - 5 - 6 - 7 - 8 - 9	$\begin{array}{c} -20.00 \\ -20.56 \\ -21.11 \\ -21.67 \\ -22.22 \\ -22.78 \end{array}$	$\begin{array}{c} -20.06 \\ -20.61 \\ -21.17 \\ -21.72 \\ -22.28 \\ -22.83 \end{array}$	$\begin{array}{c} -20.11 \\ -20.67 \\ -21.22 \\ -21.78 \\ -22.33 \\ -22.89 \end{array}$	$ \begin{array}{r} -20.17 \\ -20.72 \\ -21.28 \\ -21.83 \\ -22.39 \\ -22.94 \end{array} $	$\begin{array}{c} -20.22 \\ -20.78 \\ -21.33 \\ -21.89 \\ -22.44 \\ -23.00 \end{array}$	$\begin{array}{c} -20.28 \\ -20.83 \\ -21.39 \\ -21.94 \\ -22.50 \\ -23.06 \end{array}$	-20.33 -20.89 -21.44 -22.00 -22.56 -23.11	-20.39 -20.94 -21.50 -22.06 -22.61 -23.17	-20.44 -21.00 -21.56 -22.11 -22.67 -23.22	-20.50 -21.06 -21.61 -22.17 -22.72 -23.28	- 4 - 5 - 6 - 7 - 8 - 9
-10 -11 -12 -13 -14	$   \begin{array}{r}     -23.33 \\     -23.89 \\     -24.44 \\     -25.00 \\     -25.56   \end{array} $	$\begin{array}{c} -23.39 \\ -23.94 \\ -24.50 \\ -25.06 \\ -25.61 \end{array}$	$   \begin{array}{r}     -23.44 \\     -24.00 \\     -24.56 \\     -25.11 \\     -25.67   \end{array} $	-23.50 -24.06 -24.61 -25.17 -25.72	-23.56 -24.11 -24.67 -25.22 -25.78	-23.61 -24.17 -24.72 -25.28 -25.83	-23.67 -24.22 -24.78 -25.33 -25.89	-23.72 -24.28 -24.83 -25.39 -25.94	-23.78 -24.33 -24.89 -25.44 -26.00	-23.83 -24.39 -24.94 -25.50 -26.06	-10 -11 -12 -13 -14
-15 -16 -17 -18 -19 -20	$ \begin{array}{r} -26.11 \\ -26.67 \\ -27.22 \\ -27.78 \\ -28.33 \\ -28.89 \end{array} $	-26.17 -26.72 -27.28 -27.83 -28.39 -28.94	-26,22 -26,78 -27,33 -27,89 -28,44 -29,00	-26.28 -26.83 -27.39 -27.94 -28.50 -29.06	-26.33 -26.89 -27.44 -28.00 -28.56 -29.11	$   \begin{array}{r}     -26.39 \\     -26.94 \\     -27.50 \\     -28.06 \\     -28.61 \\     -29.17   \end{array} $	-26.44 -27.00 -27.56 -28.11 -28.67 -29.22	-26.50 -27.06 -27.61 -28.17 -28.72 -29.28	-26.56 -27.11 -27.67 -28.22 -28.78 -29.33	-26.61 -27.17 -27.72 -28.28 -28.83	-15 -16 -17 -18 -19

#### I-VII. TEMPERATURE TABLES.

I.—READINGS F. INTO C.

F.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	F.
0	C.	Ċ.	Ċ.	C.	C.	C.	Ċ.	C.	°C.	C.	0
20	-28.89	-28.94	-29.00	-29.06	-29.11	The state of the state of the	-29.22	-29.28		-29.39	-20
21	-29.44	-29.50	-29.56	-29.61	-29.67		-29.78	-29.83		-29.94	-21
22	-30.00	-30.06	-30.11	-30.17	-30.22		-30.33	-30.39	-30.44		-22
23	-30.56	-30.61	-30.67	-30.72	-30.78		-30.89		-31.00		-23
24	-31.11	-31,17	-31.22	-31.28	-31.33		-31.44				-24
25	-31.67	-31.72	-31.78	-31.83	-31.89	-31.94	-32.00	-32.06	-32.11	-32.17	-25
26	-32.22	-32.28	-32.33	-32.39			-32.56	-32.61	-32.67	-32.72	-26
27	-32.78	-32.83	-32.89	-32.94	-33.00			-33.17	-33.22	-33.28	-27
-28	-33.33	-33.39	-33.44	-33.50	-33.56	-33.61	-33,67	-33.72	-33.78	-33.83	-28
29	-33.89	-33.94	-34.00	-34.06	-34.11	-34.17	-34.22	-34.28	-34.33	-34,39	-29
-30	-34.44	-34.50	-34.56	-34.61	-34.67	-34.72	-34.78	-34.83	1000000	-34.94	-30
- 31	-35.00	-35.06	-35.11	-35.17	-35.22	-35.28	-35.33		-35.44		-31
- 32	-35.56	-35.61	-35.67	-35.72	-35.78		-35.89	-35.94	-36.00		-32
- 33 - 34	-36.11 -36.67	-36.17 -36.72	-36.22 $-36.78$	-36.28 $-36.83$	-36.33 -36.89			-36.50 -37.06	-36.56 $-37.11$	-36.61 -37.17	-38 -34
35	-37.22	-37.28		56.7			-37.56		1		
- 36	-37.78	-37.28 $-37.83$		-37.39 -37.94			-37.36				-35
37	-38.33	-38.39		-38.50						-38.83	-36
38	-38.89	-38.94	-39.00		-39.11			-39.28		-39.39	-38
39	-39.44	-39.50		-39.61			-39.78	-39.83		-39.94	-39
40	-40.00	-40.06	-40.11	-40.17	-40.22	-40.28	-40.33	-40.39	-40.44	-40.50	-40
41	40.56	-40.61	-40.67	-40.72	-40.78	-40.83	-40.89	-40.94	-41.00	-41.06	-41
42					-41.33						-49
43					-41.89						-4:
44	-42.22	-42,28	-42.33	-42.39	-42.44	-42.50	-42.56	-42.61	-42.67	-42.72	-44
45					-43.00						-47
46	43.33	43.39	-43.44	-43.50	-43.56	-43.61	-43.67	-43.72	-43.78	-43.83	-40
47	-43.89	-43.94	-44.00	-44.06	-44.11	-44.17	-44.22	-44.28	-44.33	-44.39	-47
48				-11.61	-44.67	44.72	-44.78	-44.83			-48
49	40.00	-40.06	-45.11	12925	-45.22	V .77	100	10000	-45.44		-49
50			-45.67		-45.78						-50
- 51	-46.11		-46.22		-46.33						-51
-52	-46.67	-46.72			-46.89				-47.11		-52
53	47.22	-47.28	47.33		-47.44			-47.61	-47.67	47.72	-58
54	-47.78	-47.83	-47.89	-47.94	-48.00	-48.06	-48.11	-48.17	-48.22	-48.28	-54
55	48,33				-48.56			-48.72	-48.78		-55
- 56 - 57	48.89				-49.11 40.67				-49.33 40.80		-56
58	-49.44 $-50.00$	-49.50 -50.06			-49.67 -50.22		-49.78 -50.33	-49.83 -50.39	-49.89 50.44	-49.94 50.50	-57
59	-50.56		-50.67				-50.89		-50.44 -51.00	-50.50 -51.06	-58 -59
60	-51.11	-51.17	-51 22	-51 28	-51.33	-51 39	-51 44	-51 50	-51.56	-51 61	-60
61	-51.67	-51.72	-51.78	-51.83	-51.89	-51.94	-52.00	-52.06	-52.11	-52.17	-61
62		-52.28	-52.33	-52.39	-52.44	-52.50	-52.56	-52,61	-52.67	-52.72	-62
63	-52.22 -52.78	-52.83	-52.89	-52.94	-53.00	-53.06	-53.11	-53.17	-53.22	-53.28	-63
64	-53.33	-53.39	-53.44	-53.50	-53.56	-53.61	-53.67	-53.72	-53.78	-53.83	-64
65	-53.89	-53.94	-54.00	-54.06	-54.11	-54.17	-54.22	-54.28	-54.33	-54.39	-65
-66	-54.44	-54.50	-54.56	-54.61	-54.67	-54.72	-54.78	-54.83	-54.89	-54.94	-66
67	-55.00	-55.06	-55.11	-55.17	-55.22	-55.28	-55.33	-55.39	-55.44	-55.50	-67
-68	-55.56	-55.61	-55.67	-55.72	-55.78	-55.83	-55.89	-55.94	-56.00	-56.06	-68
-69	-56.11	-56.17	-56.22	-56.28	-56.33			-56.50	-56.56	-56.61	-69
70	-56.67	-56.72	-56.78		-	-56.94	-	-57.06		-57.17	
	.0	.1	.2	.3	.4	.5	.6	.7	8.	0.	

TABLE II.—CONVERSION OF READINGS C. INTO READINGS F. (Enlarged from Guyot, p. 25).

					ged from					-	
C.	.0	.1	.2	.8	.4	-5	.6	.7	.8	.9	<b>C.</b> '
0	F.	F.	F.		F.	F.	F.	F.	B.	F.	
50						122.90					50
49 48						121.10 $119.30$					49   48
47	116.60	116.78	116.9%	117.14	117.32	117.50	117.68	117.86	118.04	118.22	47
46	114.80	114.98	115.16	115.34	115.52	115.70	115.88	116.06	116.24	116.42	46
45	113.00	113.18	113.36	113.54	113.72	113.90	114.08	114 26	114.44	114, 62	45
44	111.20	T11.38	111.56	111.74	111.92	112.10	112.28	112.46	112.64	112.82	44
43	- 109.40 - 107.60	109.58	109.76	109.94	110.12	110.30	110.48	110.66	110.84	111.02	43
1 41			106.16					107.06		109.22 107.42	42 41
li .			7	į						1	1
40			104.36 $102.56$			104.90		105.26 103.46			40 39
88			100.76								38
87	98.60		98.96	99.14		99.50	99.68		100.04		37
36	96.80	96,98	97.16	97.34	97.52	97.70	97.88	98.06	98.24	98.42	36
35	95.00	95.18	95.36	95.54	95.72	95.90	96.08	96.26	96.44	96.62	35
84	93.20	93.38	93.56	93.74	93.92	94.10	94.28	94.46	94.64	94.82	34
33 32		91.58 89.78	91.76 89.96	$91.94 \\ 90.14$	$92.12 \\ 90.32$	92.30 90.50	92.48 90.68	92.66 $90.86$	$92.84 \\ 91.04$	93.02 91.22	33 32
31	87.80	87.98	88.16	88.34	88.52	88.70	88.88	89.06	89.24	89.42	31
80		86.18	86.36	86.54	86.72	86.90	87.08	er oe	87 (	87.62	30
29	84.20	84.38	84.56	84.74	84.92	85.10	85.28	87.26 85.46	87.44 85.64	85.82	29
28	82.40	82.58	82.76	82.94	83.12	83.30	83.48	83,66	83.84	84.02	28
27 26	$80.60 \\ 78.80$	80.78 78.98	80.96 $79.16$	81.14   79.34	$81.32 \\ 79.52$	81.50 79.70	$\frac{81.68}{79.88}$	81.86 80.06	82.04 80.24	82.22 80.42	27 26
20	117.00	10.00	10.10,		117.192	10.10		17.17	00.24	30.42	
25 94	77.00	77.18	77.36	77.54	77.72	77.90	78.08	78.26	78.44	78.62	25
24 23	17.20	75.38 73.58	75.56 $73.76$	$75.74 \\ 73.94$	$75.92 \\ 74.12$	76.10 74.30	76.28 74.48	76.46 74.66	$76.64 \\ 74.84$	$76.82 \\ 75.02$	24 23
22		71.78	71.96	72.14	72.32	72.50	72.68	72.86	73.04	73.22	22
21	69.80	69.98	70.16	70.34	70.52	70.70	70.88	71.06	71.24	71.42	21
20	68.00	68.18	68.36	68.54	68.72	68.90	691.08	69.26	(9),44	69.62	20
19	66.20	66.38	66.56	66.74	66.92	67.10	67.28	67.46	67.64	67 -82	19
18 17	64.40 62.60	$64.58 \\ 62.78$	$64.76 \\ 62.96$	$64.94 \\ 63.14$	$65.12 \\ 63.32$	65.30 63.50	65.48 63.68	65.66 63.86	65.84 64.04	66.02 64.22	18. 17
16	60.80		61.16	61.34	61.52	61.70	61.88	62.06	62.24	62.42	16
	<b>5</b> 0.00	70. 40		70 74	50 F3	-0 00	00 N				1
15 14	$59.00 \ 57.20$	59.18 $57.38$	59.36 57.56	59.54 57.74	$\frac{59.72}{57.92}$	59.90 58.10	60.08 58.28	60,26 58,46	60.44 58.64	60.62 58.82	15 14
13	55.40	55.58	55.76	55.94	56.12	56.30	56.48	56.66	56.84	57.02	18
12	53.60	53.78	53.96	54.14,	$54.32 \\ 52.52$	54.50	54.68	54.86	55 .04	55.22	12
11	51.80	51.98	52.16	52.34	.9294	52.70	52.88	53.06	53.24	53.42	11
10	50.00	50.18	50.36	50.54	50.72	50.90	51.08	51.26	51.44		10
9	48.20	$\frac{48.38}{46.58}$	48.56 46.76	48.74 46.94	48.92 47.12	49.10 47.30	49.28 47.48	49.46 47.66	49.64 47.84	49.82 48.02	9
8 7	46.40 44.60	44.78	44.	45.14	45.32			45.86			8
6	42.80	42.98		43.34	43.52	43.70	43.88	44.06	44.24	44.42	6
5	41.00	41.18	41.36	41.54	41.72	41.90	42.08	42.26	42.44	<b>4</b> 2.62	5
1	39.20	39.38	39.56	39.74	39.92	40.10	40.28	40.46	40.64	40.82	4
3	37.40	37.58	37.76	37.94	38.12	38.30	38.48	$38.66^{\circ}$	38.84	39.02	3 2
2	$35.60 \\ 33.80$	35.78 $33.98$	$35.96 \\ 34.16$	$\frac{36.14}{34.34}$	$\frac{36.32}{34.52}$	$\frac{36.50}{34.70}$	$36.68 \\ 34.88$	$36.86 \\ 35.06$	$37.041 \\ 35.24$	$37.22 \\ 35.42$	1
Ô	32.00	32.18	32.36	32.54	32.72	32.90	33.08	33.26	33.44	33.62	0
	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
'L!										:	

1L-READINGS C. INTO F.

C.	.0	.1	.2	.3	.4.	.5	.6	.7	.8	.9	C.
0	F.	F.	F.	F.	F.	F.	F.	F.	F	F.	9
0	32.00	31.82	31.64	31.46	31.28	31,10	30.92	30.74	30.56	30.38	
- 1	30.20	30.02	29.84	29.66	29.48	29.30	29.12	28.94	28.76	28.58	- 1
- 2	28.40	28, 22	28.04	27.86	27.68	27.50	27.32	27.14	26,96	26.78	- 2
3			26.24	26.06	25.88	25.70	25.52	25.34	25.16	24,98	- 3
	26,60	26.42				23.90	23.72	23.54	23.36	23.18	- 4
- 4	24.80	24.62	24,44	24.26	24.08						
- 5 - 6	23.00	22.82 21.02	22.64 20.84	22.46 20.66	$\frac{22.28}{20.48}$	$\frac{22.10}{20.30}$	21.92 20.12	21.74 19.94	21.56 19.76	21.38 19.58	- 6
	21,20		19.04	18.86	18.68	18.50	18.32	18.14	17.96	17.78	- 7
- 7	19.40	19,22			16.88			16.34	16.16	15.98	4.7
- 8	17.60 15.80	$17.42 \\ 15.62$	17.24 15.44	17:06 15:26	15.08	16.70 14.90	$16.52 \\ 14.72$	14.54	14.36	14.18	- 8
- 37	00.00	37.00	-	1000	13.28	5	12.92	12.74	12.56	12.38	-10
-10	14.00	13.82	13.64	13.46		13.10	11.12	10.94	10.76	10.58	-11
-11	12.20	12.02	11.84	11.66	11.48	11.30		100000000000000000000000000000000000000	8.96	8.78	-12
-12	10.40	10.22	10.04	9.86	9.68	9,50	9.32	9.14			-13
-13	8.60	8.42	8.24	8.06	7.88	7.70	7.52	7.34	7.16	6.98	
-14	6.80	6.62	6.44	6.26	6.08	5.90	5.72	5.54	5.36	5,18	-14
-15	5.00	4.82	4.64	4.46	4.28	4.10	3.92	3.74		3.38	-15
-16	3.20	3.02	2.84	2.66	.2.48	2.30	2.12	1.94		1.58	-16
-17	1,40	1.22	1.04	0.86	0.684	0.50	0.32	0.14		- 0.22	- 17
-18	- 0.40	- 0.58	= 0.76	0.94	- 1.12	- 1.30	= 1.48	- 1.66	- 1.84	- 2.02	-18
-19	2.20	2.38	- 2.56	- 2.74	- 2,92	- 3.10	3.28	- 3.46	- 3,64	- 3.82	-19
-20	£4.00	4.18			- 4,72	- 4,90			- 5.44		-20
-21	- 5.80	- 5.98	6.16	6.34	6.52	-6.70		7.06	- 7.24	- 7.42	-21
- 22	- 7.60	- 7.78	= 7.96	- 8.14	- 8.32	-8.50	- 8.68	8.86		9.22	-22
-23	- 9.40	- 9.58	- 9.76	-9.94	-10.12		10.48	-10.66		-11.02	-23
-24	-11.20	-11.38	-11.56		-11.92	-12.10	-12.28	12.46	-12.64	-12.82	-24
-25	13.00	-13.18	-13.36	13.54	-13.72	-13.90	-14.08	-14.26	14.44		-25
-26	-14.80	14.98	-15.16			-15.70	-15.88	-16.06	16.24		-26
-27	16.60	-16.78	-16.96		-17.32		-17.68	-17.86	18.04		-27
-28	-18,40	-18.58	-18.76		-19.12	-19.30	-19.48	19.66	-19.84	-20,02	-28
-29	-20,20	-20.38	-20.56	-20.74	-20.92	-21.10	-21,28	-21.46	-21.64	-21.82	-29
-30	-22.00	-22.18	- 22.36	-22.54	-22.72	-22.90	-23.08	23,26	23,44	-23.62	-30
-31	-23.80	-23.98	-24.16	-24.34	24.52	-24.70	-24.88	-25.06	-25,24	25.42	-31
-32	-25,60	-25.78	-25.96	-26.14	-26.32	-26.50	-26.68	26,86		A C. C. W	-32
-33	-27.40	-27.58	-27.76	- 27.94	-28.12	-28.30	-28.48	28,66	-28.84		-33
-34	-29,20	-29.38	29.56	-29.74	-29,92	-30.10	-30.28	30.46	-30.64		- 34
-35	-31.00	31.18	-31.36	-31,54	-31.72	-31.90	32.08	-32.26	-32,44	32.62	-35
	-32.80	-32.98	-33.16	-33.34	-33.52		-33.88	-34.06			-36
-36				-35.14		-35.50	-35.68	35.86		-36.22	-37
-37	-34,60	-34.78 -36.58		-36.94	-37.12		-37.48	-37.66	37.84		-38
-38 -39	-36.40 -38.20	38.38	36.76 38.56		-38.92	B. C. C. Con. (1981)	39.28	-39.46	-39.64		-39
	-40,00.	40.18	40,36	40 54	40.79	40.90	41 08	41.26	-41.44	-41.69	-40
-40	41.80	-41.98	42.16	42.34					43.24		-41
-41				44.14					45,04		- 42
-42	45,40	43.78	15.70	15 04	46 19	46 20	46 19	46 66	-16 81	17 00	-43
	17.40	17.00	17.70	17.71	17 00	48 10	10.40	18 10	19 (1)	18 90	
-44	47,20	47.38	-47.00	41.14	-47.92	100000	48.28	40,40	48.64	1000	-44
-45	-49,00	49.18	49.36	49.54		49.90	-50.08	-50,26	50.44	50,62	-45
-46	50.80	50.98	-51.16	51.34	-51.52	-51.70	-51.88	52.06	52.24	52.42	-46
-47	-52.60	-52.78	52.96	-53.14	-53.32	-53.50	-53.68	-53.86	-54.04	-54.22	-47
-48	54,40	-54.58	-54.76	54.94	-55.12	-55.30	55.48	-55.66	-55.84	-56.02	-48
-49	-56,20	-56.38	56.56	56.74	-56.92		- 57.28	57.46	57.64	-57.82	-45
-50	-58.00	-58.18	58,36	-58.54	-58.72	58.90	-59.08	59, 26	59.44	-59.62	-50
	0	.1	.2	.3	.4	.5	.6	.7	.8	.0	

TABLE III.—CONVERSION OF READINGS C. AND F. NEAR BOILING POINT.
(Guyot, p. 27.)

					(Guyot	, p. 27.)					
c.	.0	.1	.92	.8	.4	.5	.6	.7	.8	.9	C
°	F.	F.	F.	r.	F.	F.	F.	F.	F.	F.	
100	212.00 210.20			212.54 $210.74$	212.72 $210.92$	$212.90 \\ 211.10$					
98	208.40	208.58	208.76	208.94	209.12	209.30	209.48	209.66	209.84	210.02	98
97 96	206.60			207.14 $205.34$	207.32 205.52	$207.50 \\ 205.70$					
95	203.00				203.72	203.90					
94	201 20	201.38	201.56	201.74	201.92	202.10	202.28	202.46	202.64	202.82	94
98	199.40	199.58	199.76	199.94	200.12	200.30	200.48	200.66	200.84	201.02	98
92 91	197.60	$ 197.78\  195.98$			198.32 $196.52$		198.68 196.88				
90	194.00	194.18	194.36	194.54	194.72	194.90	195.08	195.26	195.44	195.62	90
89	192.20	192.38	192.56	192.74	192.92	193.10	193.28	193.46	193.64	193.82	89
		,	FABLE		DEGRE			EES C	; <b>.</b>		
F.	.0	.1	.2	.8	.4	.5	.6	.7	.8	.0	F.
3	C.	C.	C.	C.	<u>c.</u>	C. '	-c.	C.	C.	C.	•
0	$0.00 \\ 0.56$	0.06 0.61	0.11 0.67	$0.17 \\ 0.72$	$0.22 \\ 0.78$	0.28 0.83	$\begin{array}{c} 0.33 \\ 0.89 \end{array}$	0.39 0.94	0.44 1.00	0.50 1.06	0
1 2	1.11	1.17	1.22	1.28	1.33	1.39	1.44	1.50	1.56	1.61	2
18	$1.67 \\ 2.22$	$\frac{1.72}{2.28}$	$\frac{1.78}{2.33}$	$\frac{1.83}{2.39}$	$\frac{1.89}{2.44}$	$\begin{array}{ c c c } 1.94 \\ 2.50 \end{array}$	$\begin{array}{c c} 2.00 \\ 2.56 \end{array}$	$\frac{2.06}{2.61}$	2.11 2.67	2. <b>23</b> 2.72	8 4
4									}	- 11	- [
5	$\frac{2.78}{3.33}$	$\frac{2.83}{3.39}$	$\frac{2.89}{3.44}$	$\begin{array}{c} 2.94 \\ 3.50 \end{array}$	$\frac{3.00}{3.56}$	3.06 3.61	$\begin{bmatrix} 3.11 \\ 3.67 \end{bmatrix}$	$\begin{bmatrix} 3.17 \\ 3.72 \end{bmatrix}$	$\begin{array}{c} 3.22 \\ 3.78 \end{array}$	3.28    3.83	5 6
. 7	3.89	3.94	4.00	4.06	4.11	4.17	4.22	4.28	4.33	4.39	7
8 9	$\frac{4.44}{5.00}$	$\frac{4.50}{5.06}$	$\frac{4.56}{5.11}$	4.61 5.17	$\begin{array}{c} \textbf{4.67} \\ \textbf{5.22} \end{array}$	$\begin{array}{c c} 4.72 \\ 5.28 \end{array}$	$\frac{4.78}{5.33}$	$\frac{4.83}{5.39}$	4.89 5.44	4.94 5.50	8   9
10	5.56	5.61	5.67	5.72	5.78	5.83	5.89	5.94	6.00	6.06	10
11	6.11	6.17	6.22	6.28	6.33	6.39	6.44	6.50	6.56	6.61	11
12 18	$6.67 \\ 7.22$	$\begin{array}{c} 6.72 \\ 7.28 \end{array}$	$\begin{array}{c c} 6.78 \\ 7.33 \end{array}$	$\frac{6.83}{7.39}$	$\frac{6.89}{7.44}$	$\frac{6.94}{7.50}$	$\begin{bmatrix} 7.00 \\ 7.56 \end{bmatrix}$	$\begin{bmatrix} 7.06 \\ 7.61 \end{bmatrix}$	7.11   7.67	7.72	12 18
14	7.78	7.83	7.89	7.94	8.00	8.06	8.11	8.17	8.22	8.28	14
15	8,33	8.39	8.44	8.50	8.56	8.61	8.67	8.72	8.78	8.83	15
16	8.89	8.94	9.00	9.06	9.11	9.17	9.22	9.28	9.33	9.39	16
17	9.44 10.00	$9.50 \\ 10.06$	$\begin{array}{c c} 9.56 \\ 10.11 \end{array}$	$\frac{9.61}{10.17}$	$\frac{9.67}{10.22}$	$\frac{9.72}{10.28}$	$\frac{9.78}{10.33}$	$\frac{9.83}{10.39}$	9.89   10.44	9.94 10.50	17 18
19	10.56	10.61	10.67	10.72	10.78	10.83	10.89	10.94	11.00	11.06	19
20	11.11	11.17	11.22	11.28	11.33	11.39	11.44	11.50	11.56	11.61	20
1			TABLI	E V D	EGRE	<b>ES</b> C	DEGRI	ees f.			
 					(Guyot	, p. 35).					
C.	.0	.1	.x	.8	<b>.4</b>	.5	.6	.7	.8	.9	C.
0	F. 0.00	F. 0.18	F. 0.36	F. 0.54	F. 0.72	F. 0.90	F. 1.08	F. 1.26	F. 1.44	F. 1.62	· o
, 1.	1.80	1.98	2.16	2.34	2.52	2.70	2.88	3.06	3.24	3.42	1
3	$\frac{3.60}{5.40}$	$\frac{3.78}{5.58}$	$\frac{3.96}{5.76}$	$\frac{4.14}{5.94}$	$\begin{array}{c c} 4.32 \\ 6.12 \end{array}$	$\frac{4.50}{6.30}$	$\frac{4.68}{6.48}$	4.86 6.66	$\frac{5.04}{6.84}$	$\frac{5.22}{7.02}$	2 8
4	7.20	7.38	7.56	7.74	7.92	8.10	8.28	8.46	8.64	8.82	4
5	9.00	9.18	9.36	9.54	9.72	9.90	10.08	10.26	10.44	10.62	5
6	10.80	10.98	11.16	11.34	11.52	11.70	11.88	12.06	12.24	12.42	5
8	$12.60 \\ 14.40$	$12.78 \\ 14.58$	$12.96 \\ 14.76$	13.14 $14.94$	13.32 15.1 <b>3.</b>	13.50 15.30	13.68 15.48	13.86 15.66	14.04 15.84	14.22 16.02	8
9	16.20	16.38	16.56	16.74	16.92	17.10	17.28	17.46	17.64	17.82	9

TABLE VI.-VALUES OF THE INTENSITY OF SOLAR BADIATION J. AND SOLAR CONSTANT A. IN TERMS OF THE MEAN SOLAR CONSTANT Ao.

Ferrel. Rep. C. S. O., 1885, pt. 2, p. 427).

DATE.	DAY	it.					LATIT	UDES					Α.
	YEAR		0°	10°	20°	30°	40°	50°	60°	70°	80	90°	11.
Jan. 1	]	00.99	.303	. 265	.220	.169	.117	.066	.018				1.033
1.6	16	15.78	.307	.271	.229	.180	.129	.078	.028	1			1.032
Feb. 1	32	31.54	.312	.282	.211	200	. 150	.100	.048	.006			1.028
15	, 47	45.34	317	293	261	. 223	.177	.118	.075	027	1		1.023
Mar. 1	60	59.14	.320	.303	.279	. 245	.204	.158	.108	.056	013		1.017
16	75	73.93	.321	.313	.296	.270	.236	. 195	.148	.097	.057		1.009
Apr. 1	91	89.70	.317				.269					.082	1.000
16		104.49	.311	.321	.323	.315	. 297	.271	.238	. 201	.175		0.992
May 1		119.29	.303	.318	.330	.329	.320	.302	.278	.253			0.984
.16		134.05	. 294	.318	333	.339	. 337	.327	.312	.2981	1.317	.322	0.977
June 1		149.82	. 287				.349						
16	167	164.60	.283	.313	:.334	348	354	.353	.348	.361	.378	.384	0.967
July 1		179.39	. 283				.352	.351	.345	.356	.373	379	$^{1}.0.966$
16		194.13	.287				.345			.331			0.967
Aug. 1		209.94		.316	.330	. 334	.330					.300	0.970
16		224.73	.303		.325					. 234		. 231	0.976
Sept. 1		240.50								.180			0.982
16		255.29			.305								0.990
Oct. 1		270.07	317	.308	.289	.261	.225	.183	.135	.084	.065		0.999
16	289	284.86					.194						
Nov. 1	305	300.63			. 251	.211	.164	.114	.063	.018			1.016
16	320	315.42					.140	.089	.040				1.023
Dec. 1		330.19	.304	.267	. 224	.175	.124	.072	.024				1.028
16	350	344.98	.302	. 263	.218	.167	.115	.064	.016		·		1.032
Year			305	301	289	.268	.241	.209	173	.144	.133	.126	1

## TABLE VII.-DIMINUTION OF TEMPERATURE FOR EACH 100 METRES OF ASCENDING SATURATED AIR.

(Ferrel. Rep. C. S. O. 1885, pt. 2, p. 428).

PRESSURE.				TEMI	PERATU.	RE C.				ALTITUD
	-10°.	-ō°.	0°.	5°.	10,	15°.	20°.	25°.	30°.	FOR ()° (
mm.		0	•	•	0	0	0	0		metres
760	0.74	0.68	0.64	0.58	0.53	0.48	0.43	0.40	0.37	:
700	.73	.66	.63	.57	.51	.46	.42	.38	.36	66
600	.70	. 63	.60	.54	.48	.43	.40	.36	<b></b> .	189
500	. 66	.60	.56	.50	.45	.40	.37			335
400	.62	.55	.51	.46	.41	.37				514
300	.56	.49	.46	.42		l				755
200	.48	.41	.39							1068

## TABLE VIII.—REDUCTION OF BAROMETER READINGS TO FREEZING. ENGLISH.

(Enlarged from Guyot, p. 270.) Inches.

							nche	5.						
F.	20.	20.5	21.	21.5	22	2.5.5	23	23.5	24.	24.5	23.	25.5	26.	F.
							ADD							
0	,051	.053	.054	.055	.056	.058	.059	.060	.061	.063	.064	.065	.067	1
1	.049	.051	.052	.053	.054	.056	.057	.058	.059	.061	.062	.063	.064	
2	.048	.049	.050	,051	.052	.054	.055	,056	,057	.058	.060	.061	.062	
3	.046	.047	.048	.049	.050	.052	.053	.054	.055	.056	.057	.059	.060	
4	.044	.045	.046	.047	.048	.050	.051	.052	.053	,054	,055	.056	.057	
5	.042	.043	.044	.045	.046	.048	.049	.050	.051	.052	.053	.054	.055	
6	.040	.042	,042	.044	.044	.046	.047	.048	.049	.050	.051	.052	.053	
7	.039	.040	.041	.042	.042	.044	.044	.046	.046	.047	.048	.049	.050	1.3
8		.038		.040	.041	.041	.042	.043	.044	.045	.046	.047	.048	
9	.035	.036	.037	.038	.039	.039	.040	.041	.042	.043	.044	.045	.046	- 3
10	.033	.034	.035	.036	.037	.037	.038	.039	.040	.041	.042	.042	.043	10
11		.032	.033	.034	.035	.035	.036	.037	.038	. 039		.040	.041	11
12	.030	.030	.031	.032	.033	.033	.034	.035	,036	.036	.037	.038	.039	1
13	.028	.029	.029	.030	.031	.031	.032	.033	.033	.034	.035	.036	.036	13
14	.026	.027	.027	.028	.029	.029	.030	.031	.031	.032	.033	.033	.034	14
15	.024	.025	.026	.026	.027	.027	.028	.029	.029	.030	030	.031	.032	16
16	.022	.023	.024	.024	.025	.025	.026	.026	.027	.028	.028	.029	.029	16
17	.021	.021	.022	.022	.023	.023	.024	.024	.025	.025	.026	.026	.027	17
18	.019	.019	.020	.020	.021	.021	.022	.022	.023	.023	.024	.024	.025	18
19	.017	.018	.018	.018	.019	.019	.020	.020	.021	.021	.021	.022	,022	19
20	.015	.016	.016	.016	.017	.017	.018	.018	.018	.019	.019	.020	.020	20
21	.014	.014	.014	,015	.015	.015	.015	.016	.016	.017	.017	.017	.018	21
22	.012	.012	.012	.013	.013	.013	.013	.014	.014	.014	.015	.015	.015	22
23	.010	.010	.010	.011	.011	.011		.012	.012	.012	.012	.013	.013	23
24	.008	.008	.009	.009	.009	.009	.009	.010	.010	.010	.010	,010	.011	24
25	.006	.007	.007	.007	.007	.007	.007	.007	.008	.008	.008	.008	.008	25
26	.005	.005	.005	.005	.005	,005	.005	.005	.005	.006	.006	.006	.006	26
27	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.004	27
28	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	28
						SU	BTRA	CT.						
29	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	29
30	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.003	.004	.001	30
31	,005	.005	.005	.005	.005	.005	.005	.005	.005	.006	.006	.006	.006	31
32	.006	.006	.007	.007	.007	.007	.007	.007	.008	.008	.008	.008	.008	32
33	.008	.008	.008	.009	.009	.009	.009	.010	.010	.010	.010	.010	.011	33
34	.010	.010	.010	.011	.011	.011	.011	.012	.012	.012	.012	.013	.013	34
35	.012	.012	.012	.013	.013	.013	.013	.014	.014	.014	.015	.015	.015	3.5
36	.013	.014	.014	.014	.015	.015	.016	.016	.016	.017	.017	.017	017	36
37	.015	.016	.016	.016	.017	.017	.018	.018	.018	.019	.019	.019	.020	37
38	.017	.017	.018	.018	.019	.019	.020	.020	.020	.021	.021	.022	.022	38
39	.019	.019	.020	.020	.021	.021	.022	.022	.023	.023	.024	.024	.024	39
40	.021	.021	.022	.022	.023	.023	.024	.024	.025	.025	.026	.026	.027	40
41	.022	.023	.024	.024	.025	.025	.026	.026	.025	.023	,028	.020	.029	41
42	.024	.025	.025	.026	.027	.027	.028	.028	.029	.030	.030	.031	.031	40
43	.026	.027	.027	.028	.029	.029	.030	.031	.031	.032	.032	.033	.034	42
44	.028	.029	.029	.030	.031	.031	.032	.033	.033	.034	.035	.035	.036	44
45	.030	.030	.031	.032	.033	.033	.034	.035	.035	096		0.01	(2)	
46	.031	.032	.033	.034	.035	.035	.036	.035	.038	.036	.037	.038	.038	45
47	.033	.034	.035	.036	.036	.037	.038	.039	.040	.041	.039 $.041$	.040	.041	46
48	.035	.036	.037	.038	.038	.039	,040	.041	.042	.043	.041	.042	.045	48
49	.037	.038	.039	.040	.040	.041	.042	.043	.044	.045	.046	.047	.048	49
447		.039	.040	.041	.042	.043	.044	.045	.046	.047	4 200 400	.049	TACALY.	10

VIII.—BAROMETER TO FREEZING. ENGLISH. Inches.

20	20 5	21.	21.5	22.	22.5	23.	23 5	24.	24.5	25.	25.5	26.	F
					SUI	BTRA	CT.						
038	.039	.040	.041	012	.043	044	.045	.046	.047	018	049	.050	
													ì
.040	.047	.048	.049	.000	.051	.052	.054	.บออ	.000	.007	.008	. บอย	ŧ
.047	.049	.050	.051	.052	.053	.055	.056	.057	.058	.059	.060	.062	
.049	.050	.052	.053	.054	.055	.057	.058	.059	.060	.061	.063	.064	
.051	.052	.054	.055	.056	.057	.059	.060	.061	.062	.064	065	.066 (	
.053	.054	.055	.057	.058	.059	.061	.062	.063	.065	.066	.067	.069	į
.055	.056	.057	.059	.060	.061			.065			.070	.071	ě
050	020	050	001	Octo 1	000	. 002	000	000	nen	0-0	. 0-0	070	•
													- 7
													è
													ì
.000	. (40)	.007	.000	.070	.071	.013	.010	.070	.078	.079	1.001	.082	•
.065	.067	.068	.070	.072	.073			.078			.083	.085	(
.067	.069	.070	.072	.074	.075			.080	.082	.084	.085	.087	
.069	.071	.072	.074	.076	.077			.083	.084	.086	.088	.089	(
.071	.072	.074	.076	.078	.079	.081	.083	.085	.086	.088	.090	.092	(
.072	.074	.076	.078	.080		.083	.085	.087	.089	.090			(
074	076	079	USU	Ueo	USS	082	087	080	001	บดอ	005	oor	
													3
													- 3
.081	.083	.085	.087	.089	.091	.093	.095	.097	.099	.102	.104	.106	1
.083	.085	.087	.089	.091	.093	. 095	.098	.100	.102	.104	.106	.108	7
											1		- 3
													- 3
. ບຄບ	.002	, .UUU 	.077	.ບານ	.101	.104	. 100	.100	1110	.113	1110	.117	•
.092			.099	.101	.103				.113	.115	.117	.119	1
.094	.096	.098	.101	.103	. 105	. 108			.115	.117	.119	.122	
.095	.098	.100	.103	.105	.107	.110	.112	.114	.117	.119	.122	.124	
.097	.100	.102	.104	. 107			.114	.117	.119	.121	.124	.126	
.099	. 101	.104	.106	.109			.116	.119	.121	.124	.126	.129	8
101	109	108	108	111	119	116	118	191	199	198	199	191	,
													į
							.123						
				•			1						
		.115	.118	.121			.129		.134	.137			- 5
.111	.114		.120	.122	.125	.128	131	134	.136	. 139	142	.145	3
.113	.116		.122				.133				144	147	3
					.129	.132	. 135						
.117	.120	. 122	.125	.128	.131	. 134	.137	.140	.143	.146	.149	.152	- 1
.118	.121	.124	127	. 130	133	. 136	.139	.142	.145	.148	.151	.154	,
.120	123												- 3
122													- 1
.124			.135	.138			.143	.151					•
	. 27	. 104	. 1001	. 100	. 144 1			. 1071					
	.038 .040 .042 .044 .046 .051 .053 .055 .066 .062 .063 .067 .072 .074 .076 .088 .089 .089 .089 .089 .099 .091 .092 .094 .095 .099 .091 .101 .108 .1108 .1111 .1117 .1118 .1117 .1118 .1117	.038   .039   .040   .041   .042   .043   .044   .045   .047   .047   .049   .050   .051   .052   .053   .055   .056   .058   .056   .056   .065   .066   .061   .062   .063   .065   .067   .069   .071   .072   .074   .076   .076   .078   .080   .081   .083   .085   .087   .081   .083   .085   .087   .081   .083   .085   .087   .089   .090   .092   .092   .094   .096   .099   .092   .092   .094   .096   .097   .006   .099   .011   .101   .103   .105   .104   .107   .106   .109   .101   .101   .103   .105   .104   .107   .106   .109   .101   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .111   .112   .111   .112   .113   .112   .123   .122   .125   .124   .127   .120   .123   .124   .127   .120   .125   .124   .127   .120   .125   .124   .127   .120   .125   .124   .127   .120   .126   .1	.038   .039   .040   .042   .042   .043   .044   .045   .046   .047   .048   .047   .048   .047   .048   .047   .049   .050   .052   .051   .052   .051   .055   .056   .057   .056   .057   .056   .063   .065   .067   .068   .067   .068   .067   .069   .071   .072   .074   .076   .074   .076   .074   .076   .078   .080   .082   .083   .085   .083   .085   .087   .088   .081   .083   .085   .087   .089   .091   .093   .092   .095   .098   .090   .092   .095   .098   .090   .092   .095   .098   .090   .092   .095   .098   .090   .092   .095   .098   .100   .097   .100   .102   .099   .101   .104   .101   .103   .106   .103   .105   .108   .104   .107   .109   .106   .109   .101   .101   .103   .106   .109   .101   .101   .103   .106   .109   .101   .101   .103   .105   .108   .104   .107   .109   .106   .109   .111   .115   .111   .114   .117   .115   .116   .119   .115   .118   .121   .124   .120   .122   .123   .126   .124   .127   .130   .126   .122   .125   .128   .124   .127   .130   .126   .127   .130   .127   .127   .130   .127   .127   .130   .127   .127   .130   .127   .127   .130   .127   .127   .1	.038   .039   .040   .041   .040   .041   .042   .043   .044   .045   .046   .047   .046   .047   .046   .047   .046   .047   .046   .047   .048   .049   .050   .052   .053   .051   .052   .054   .055   .055   .055   .055   .055   .055   .055   .056   .057   .059   .061   .062   .063   .065   .066   .063   .065   .066   .063   .065   .066   .063   .065   .066   .063   .065   .066   .063   .065   .066   .063   .065   .067   .068   .070   .072   .074   .076   .072   .074   .076   .078   .080   .082   .084   .079   .081   .083   .085   .087   .089   .091   .093   .085   .087   .089   .091   .083   .085   .087   .089   .091   .093   .084   .096   .092   .095   .097   .092   .094   .096   .099   .092   .095   .097   .092   .094   .096   .099   .091   .011   .104   .106   .101   .103   .106   .108   .111   .114   .117   .120   .122   .125   .128   .131   .116   .112   .124   .127   .130   .133   .134   .127   .130   .133   .134   .127   .130   .133   .135   .134   .127   .130   .133   .136   .133   .134   .127   .130   .133   .136   .133   .138   .133   .134   .127   .130   .133   .138   .136   .133   .138   .136   .133   .138   .1	.038   .039   .040   .041   .042   .040   .041   .042   .043   .044   .042   .043   .044   .045   .046   .044   .045   .046   .046   .047   .048   .049   .050   .052   .053   .054   .055   .056   .053   .054   .055   .056   .053   .054   .055   .056   .055   .056   .057   .059   .060   .061   .062   .064   .066   .063   .065   .066   .068   .063   .065   .066   .068   .063   .065   .066   .068   .063   .065   .066   .068   .063   .065   .066   .068   .063   .065   .066   .068   .060   .061   .072   .074   .076   .078   .072   .074   .076   .078   .072   .074   .076   .078   .078   .079   .072   .074   .076   .078   .080   .082   .083   .085   .087   .080   .082   .083   .085   .087   .089   .081   .083   .085   .087   .089   .091   .093   .095   .081   .083   .085   .087   .089   .091   .093   .095   .097   .099   .092   .094   .096   .098   .091   .093   .095   .097   .099   .092   .094   .096   .098   .091   .093   .095   .097   .099   .091   .094   .096   .098   .091   .093   .095   .097   .099   .091   .094   .096   .098   .091   .093   .095   .097   .099   .091   .094   .096   .098   .091   .093   .095   .097   .099   .091   .0	O38	SUBTRAC	SUBTRACT.	SUBTRACT	SUBTRACT	SUBTRACT	SUBTRACT	SUBTRACT

VIII.—BAROMETER TO FREEZING. ENGLISH.
Inches.

F.	26.	26.5	27.	27.5	28.	28.5	29.	29.5	<b>30</b> .	80.5	31.	F
						ADD.						
ž	.062	.063	.064	.066	.067	.068	.069	.070	.072	.073	.074	ģ
2.5	.061	.062	.063	.064	.065	.067	.068	.069	.070	.072	.072	. 2
8	.060	.061	.062	.063	.064	.065	.067	.068	.069	.070	.071	ā
8.5	.058	:059	.061	.062	.063	.064	.065	.066	.068	.069	.070	ં ક
4	.057	.058	.059	.061	.062	.063	.064	.065	.066	.067	.068	4
4.5	.056	.057	.058	,059	.660	.061	.063	.064	.065	.066	.067	4
5	.055	.056	.057	.058	.059	.060	.061	.062	.063	.065	.066	5
5.5	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	5
6	.053	.054	.055	.056	.057	.058	.059	.060	.061	.062	.063	6
6.5	.052	.053	.054	.055	.055	.056	.058	.058	.059	.060	.061	6
7	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	7
7.5	.049	.050	.051	.052	.053	.054	.055	.056	.057	.058	.058	7.
8	.048	.049	.050	.051	.052	.053	.054	.054	.055	.056	.057	8
8.5	.047	.048	.049	.050	.050	.051	.052	.053	.054	.055	.056	<b>8</b> .
9	.046	.046	.047	.018	.049	.050	.051	.052	.053	.054	.054	9
9.5	.045	.015	.046	.047	.018	.019	.050	$.05\tilde{0}$	.051	.052	.053	9.
10	.043	.044	.045	.047	.047	.047	.048	.049 :	.050	051		10 10
10.5	.043	.043	.044	.045	.045	.046	.048	.048	.030	050		10.
11	.041	.042	.042	.043	.044	.045	.046	.046	.047	.048		11
11.5	.040	.041	.041	.043	.043	.044	.045	.045	.046	.046		11.
12	.039	.039	.040	.042	.043						010	10.
						.042	.043	.044	.045	.045	.046	12
12.5	.038	.038	.039	.040	.040	.041	.042 :	.042	.043	.044		12.
18	.036	.037	.038	.038	.039	.040	.040	.041	.042	.043	.043	18
13.5	.035	.036	.037	.037	.038	.039	.039	.040	.041	.041	.042	18.
14	.034	.035	.035	.036	.037	.037	.038	.038	.039	.040	.040	
14.5	.033	.034	.034	.035	.035	.036	.036	.037	.038	.038		14.
15	.032	.032	.033	.033	.034	.035	.035	.036	.036	.037		15
15.5	.031	.031	.032	.032	.033	.033	.034	.034 ;	.035	.036		15.
16	.029	.030	.030	.031	.032	.032	.033	.033 +	.034	.034	.035	16
16.5	.028	.029	.029	.030	.030	.031	.031	.032	.032	.033	.033	16.
17	.027	.027	.028	.028	.029	.030	.030	.031	.031	.032		17
7.5	.026	.026	.026	.027	.027	.028	.028	.029	.030	.030		17.
18	$.025 \pm$	.025	.025	026	.026	.027	.027	$.028^{+}$	.028	.029	.029	18
18.5	.024	.024	.024	.025	.025 +	.026	.026	.027	.027	.028		18.
19 '	.022	$.023^{+}$	.023	.024	.024	.024	$.025^{+}$	.025	.026	.026		19
9.5	.021	.022	.022	.022	.023	.023	.024	.024	.024	.025		19.
20	.020	.020	.021	.021	.021	.022	.022	.023	.023	.023	.024	20
20.5	.019	.019	.019	.020	.020	.021	.021	.021	.022	.022		20.
21	.018	.018	.018	.019	.019	.019	.020	.020	.020	.021	.021	21
21.5	.017	.017	.017	.017	.018	.018	.018	.019	.019	.019	.020	$ar{2}ar{1}.ar{6}$
22 .	.015	.016	.016	.016	.016	.017	.017	.017	.018	.018		22°
2.5	.014	.014	.015	.015	.015	.015	.016	.016	.016	.016		<b>22</b> .
3	.013	.013	.013	.014	.014	.014	.014	.015	.015	.015	.015	23
3.5	.012	.012	.012	.012	.012	.013	.013	.013	.014	.014		28.
24	.011	.011	.011	.011	.011	.012	.012	.012	.012	.012		24
4.5	.010	.010	.010	.010	.010	.010	.011	.011	.011	.011	.011	$2\overline{4}.$
5	.008	.008	.009	.009	.009	.009	.009	.009	.009	.010		<b>2</b> 5``
5.5	.007	.007	.007	.007	.007	.008	.008	.008	.008	.008		25.
6	.006	.006	.006	.006	.006	.006	.007	.007	.007	.007	.007	26
6.5	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005		26.
7	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004		27
7.5	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	27.
8	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001		28 28
8.5	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	28.6

VIII.-BAROMETER TO FREEZING. ENGLISH.

F.	26.	26.5	27.	27.5	28.	28,5	29.	29.5	30.	30.5	31.	F.
					su	BTRAC	т.					
28.5	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	28.5
29	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	.001	29
29.5	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	.002	29.5
30	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	.004	30
30.5	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	.005	30.5
31	.006	.006	.006	.006	.006	.006	.007	.007	.007	.007	.007	31
81.5	007	.007	.007	.007	.007	.008	.008	.008	.008	.008	.008	81.5
82	.008	.008	.008	.009	.009	.009	.009	.009	.009	.010	.010	82
32.5 33	.009	.009	.010	.010	.010	.011	.011	.011	.011	.011	.011	82.5
33.5	.011 $.012$	.011	.011	.011		.012	.012 .013	$\begin{array}{c} .012 \\ .013 \end{array}$	.012	.012	.012	88
99.9	.012	.012	.012	.012	.012	.015	.015	.015	.014	.014	.014	38.5
34	.013	.013	.013 -	.014	.014	.014	.014	.015	.015	.015	.015	34
34.5	.014	.014	.014	.015	.015	.015	.016	.016	.016	.016	.017	34.5
35	.015	.015	.016	.016	.016	.017	.017	.017	.018	.018	.018	85
35.5	.016	.016	.017	.017	.017	.018	.018	.019	.019	.019	.020	85.5
86	.017	.018	.018	.019	.019	.019	.020	.020	.020	.021	.021	36
86.5	.018	.019	.019	.020	.020	.020	.021	.021	.021	.022	.022	36.5
37	.020	.020	.021	.021	.021	.022	.022	.022	.023	.023	.024	37
37.5	.021	$.021^{-1}$	$.022^{\pm}$	.022	.022	.023	.023	.024	.024	$.025 \pm $	.025	37.5
38	.022	.023;	.023	.023	.024	.024	.025	.025	.026	.026	.026	88
88.5	.023	.024	.024	.025	.025 :	.026	.026	.026	.027	.027	.027	88.5
39	.024	.025	.025	.026	.026	.027	.027	.028	.028	.029	.029	39
39.5	.025	.026	.026	.027	.027	.028	.028	.029	.029	.030	.030	39.5
40	.027	.027	.028	.028	.029	.029	.030	.030	.031	.031	.032	40
40.5	.028	.029	.029	.030	.030	.031	.031	.032	.032	.033	.033	40.5
41	.029	.030	.030	.031	.031	.032	.033	.033	.034	.034	.035	41
11.5	.030	.031	.031	.032	.032	.033	.034	.034	.035	.035	.036	41.5
12	.031	.032	.033	.033	.034	.034	.035	.036	.036	.037	.037	42
12.5	.033	. 033	.034	.035	.035	.036	:036	.037	.038	.038	.039	42.5
43	.034	. 034	.035	. 036	.036	.037	.038	.038	.039	.040	.040	43
43.5	.035	. 036	.036	.037	.038	.038	.039	.040	.040	.041	.041	48.5
14	.036	.037	.037	.038	.039	.040	.040	.041	.042	.042	.043	44
44.5	.037	.038	.039	.039	.040	.041	.042	.042	.043	.044	.044	44.5
45 5	.038	.039	.040	.041	.041	.042	.043	.044	.044	.045	.046	45
15.5	.040	.040	.041	.042	.042	.043	.044	.045	.046	.046	.047	45.5
46	.041	.042	.042	.043	.044	.045	.045	.046	.047	.048	.049	46
46.5 ¦	.042	.043	.044	.044	.045	.046	.047	.047	.048	.049	.050	46.5
47	.043	.044	.045	.046	.046	.047	.048	.049	.050 '	.051	.051	47
47.5	.044	.045	.046	.047	.047	.048	.049	.050	.051	.052	.053	47.5
48	.045	.046	.047	.048	.049	.050	.051	.052	.052	.053	.054	48
48.5	.046	.047	.048	.049	.050	.051	.052	.053	.054	.054	.055	48.5
49	.048	.049	.050	.050	.051	.052	.053	.054	.055	.056	.057	49
49.5	049	050	.051	.052	.052	.053	.054	.055	.056	.057	.058	49.5
50	.050	.051	.052	.053	.054	.055	.056	.057	.058	.059	.060	50
50.5	$\begin{array}{c} .051 \\ .052 \end{array}$	.052	.053	.054	.055	.056	.057	.058	.059	.060	.061	50.5
51 51.5	.054	.053   .055	.056	.055	.056	.059	.058	$.059 \\ .061$	$.060 \\ .062$	.061	0.062 $0.064$	51 51.5
52	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	51.5 52
<b>7</b> 4	. (7.51)	.000	1001	.000	.000	.000	.001	.002	.000	.004	.000	94

VIII.-BAROMETER TO FREEZING. ENGLISH.

						inches.	· 					
F.	26.	26.5	27.	27.5	28.	28.5	29.	29.5	80.	30.5	31.	F.
					SU	BTRAC	т.					
52	.055	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	52
52.5	.056	.057	.058	.059	.060	.061	.062	.063	.064	.065	.066	52
58	.057	.058	.059	.060	.061	. 063	.064	.065	.066	.067	.068	53
58.5	.058	.059	.060	.061	.063	.064	.065	.066	.067	.068	. 069	58
54	.059	.060	.062	.063	.064	.065	.066	.067	.068	.070	.071	54
54.5	.060	.062	.063	.064	.065	.066	.068	.069	.070	.071	.072	54
55	.062	.063	.064	.065	.066	.068	.069	.070	.071	.072	.073	
55.5	.063	.064	.065	. 066 -	.068	.069	.070		.072	.073		55
56	.064	.065	. 0.66	. 068∍	. 069	.070	.071	.073	.074	.075	.076	56
56.5	.065	.066	.068	.069	.070	.071	.073	.074	.075	.076	.077	56
57	.066	.068	.069	.070	.071	.073	.074	.075	.076	.078		57
57.5	.068	.069	.070	.071	.073	.074	.075	.077	.078	.079	.080	57
58	.069	.070	.071	.073	.074	.075	.077	.078	.079	.081	.082	58
8.5	.070	.071	.072	.074	. 075	.077	.078	.079	.081	.082	.083	58
59	.071	.072	.074	.075	.076	.078	.079	.080	.082	. 083	.085	59
59.5	.072	.074	. 075 □	.076	.078	.079	.080	.082	.083	.085	.086	59
BO	.073	.075	.076	.077	.079	.080	.082	.083	.085	.086	.087	60
BO.5	.074	.076	.077	.079	.080	.081	.083	.084	.086	.087	.089	60
31	.075	.077	.078	.080	.081	.083	.084	.086	.087	.089	.090	61
81.5	.077	.078	.080	.081	.083	.084	.086	.087	.089	.090	.091	61
82	.078	.079	.081	.082	.084	.085	.087	.088	.090	.091	.093	62
82.5	.079	.081	.082	.084	.085	.086	.088	.090	.091	.093	.094	62
68	.080	.082	.083	.085	.086	.088	.089	091	.093	.094	.096	63
88.5	.081	.083	.085	.086	.088	.089	.091	.092	.094	.096	.097	68
<b>64</b>	.082	.084	.086	.087	.089	.090	.092	.094	.095	.097	.098	64
64.5	.084	.085	. 087	.088	.090	.092	.093	.095	.097	.098	.100	64
65	.085	.086	.088	.090	.091	.093	.095	.096	.098	.100	.101	65
65.5	.086	.088	.089	.091	.093	.094	.096	.098	.099	.101	.103	65.
66	.087	. 089	.090	.092	.094	.096	.097	099	. 101	.102	. 104	66
<b>66.5</b>	.088	.090	.092	.093	.095	.097	.099	.100	.102	.104	.105	66
67	.089	.091	.093	.095	.096	.098	.100	. 102	.103	.105	.107	67
67.5	.091	.092	.094	.096	.098	.099	. 101	.103	.105	.106	.108	67.
68	.092	.094	.095	.097	.099	.101	. 102	.104	.106	.108	.109	68
68.5	.093	.095	. 097	.098	. 100	.102	. 104	.105	.107	.109	.110	68.
69	.094	.096	.098	.100	. 101	.103	.105	.107	.109	.110	.112	69
<b>69.5</b>	. 095	.097	.099	.101	.103	.105	. 106	.108	.110	.111	.113	69.
70	.096	.098	.100	.102	.104	.106	.108	.109	.111	.113	·. 115	70
70.5	.098	.099	.101	.103	. 105	.107	. 109	.111	.112	.114	.116	70.
71	.099	.101	.102	.104	. 106	.108	.110	.112	.114	.116	.118	71
71.5	.100	.102	.104	.106	.108	.110	.111	.113	.115	.117	.119	71.
72	.101	.103	.105	.107	.109	.111	.113	.115	.117	.119	120	72
72.5	.102	.104	.106	.108	.110	.112	.114	.116	.118	.120	.122	72.
78	.103	.105	.107	.109	.111	.113	.115	.117	.119	.121	.123	78
78.5	.105	.107	.109	.110	.113	.115	.117	.119	.121	.123	.125	78.
74	.106	.108	.110	.112	.114	.116	.118	.120	.122	.124	.126	74
74.5	.107	.109	.111	.113	.115	.117	.119	.121	.123	.125	.128	74.
75	.108	.110	.112	.114	.116	.118	.120	.122	.125	.127	.129	75
75.5	.109	.111	.113	.115	.118	.120	.122	.124	.126	128	.130	75.
76	.110	.112	.114	.117	. 119	.121	.123	.125	.127	.129	. 131	76

VIII.-BAROMETER TO FREEZING. ENGLISH.

						nches-						
F.	26.	26.5	27.	27.5	28.	28.5	29.	29.5	30.	30.5	31.	F.
				-	SU	BTRAC	CT.					
7 Å	.110	.112	.114	.117	.119	.121	.123	.125	127	.129	.131	7 <b>6</b>
76.5	.111	.113	.116	.118	.120	122	124	.126	.128	.131	.133	76.
77	.112	.115	.117	.119	.121	123	.126	.128	.130	.132	. 134	77
77.5	.114	.116	.118	.120	.123	.125	.127	.129	.131	.134	.136	77.
78	.115	.117	.119	.122	.124	.126	.128	.130	.133	.135	.137	78
78.5	.116	.118	.120	.123	.125	.127	.129	. 132	.134	.136	.138	78.
79	.117	.119	.122	.124	.126	.128	.131	.133	.135	. 137	.140	79
79.5	.118	.120	.123	.125	.128	.130	. 132	. 134	.137	.139	. 141	79.
80	.119 .	.122	.124	.126	.129	.131	.133	. 136	.138	.140	.143	80
80.5	. 121	.123	.125	.128	.130	.132	.135	.137	.139	.142	.144	80.
81 -	.122	.124	.126	.129	. 131		.136	.138	.141	.143	.145	81
81.5	.123	.125	.128	.130	.133	.135	. 137	.139	.142	.144	. 147	81.
82	.124	.126	.129	.131	.134	.136	.138	.141	.143	146	.148	82
82.5	.125	.127	.130	.132	.135	.137	.140	.142	.145	.147	. 149	82.
88	.126	.129	.131	.134	.136	.139	.141	.143	.146	.148	.151	88
88.5	.128	.130		.135	.138	.140	.142	.145	.147	.150	.152 .154	83.
84	.129	.131	.134	.136	.139	.141	.144	.146	.149	.151	,104	84
84.5	.130	.132	. 135	.137	.140	.142	.145	.147	.150	.152	.155	84.
85	.131	.134	.136	.139	.141	.144 .145	$.146 \\ .147$	.149	.151	.154	.156 $.158$	85. 85.
85.5	.132	.135	.137	.140	.142				.153	.156	.159	86
86	.133	.136	.138	.141	.144	.146 .148	.149	.151	.154 .155	.158	.161	86.
86.5	.135	.137	.140	.143	.145			.154		.158	.162	87
87 -	. 136	.138	.141 .142	.143	.146	.149 .150	. 151 . 153	.155	.157 .158	.161	.164	87.
87.5	.137		1	.145	.147					} 1		
88	.138	.141	.143	.146	.149	.151	. 154	.157	. 159	.162	.165	88
88.5	.139	.142	.144	.147	.150	.153	.155	.158	.161	.163	.166	
89	.140	.143	.146	.148	. 151	.154	.156	.159	.162	.165	.167	89
89.5	.141	.144	.147	.149	.152	.155	.158	.160	.163	.166	.168	89.
90	.142	.145	.148	.151	.153	.156	.159	.162	.164	.167	.170	90
90.5	.144	.146	.149	.152	.155	.158	.160	.163	.166	.168	.171	90.
91	.145	.148	.151	.153	.156	.159 .160	.162 .163	.165 :166	.167 .168	.170 .171	.173 .174	91 91.
91.5	.146	.149	.152	.154	.157	.161	.164		.170	.172	.175	92
92	.147	.150	.153	.156	.158	.162	.164	.167 .168	.170	.174	.173	92.
92.5	.148	$.151 \\ .152$	.154	.157	.159	.164	.167	.170	.172	.175	.178	98
98 93.5	.149 .150	.153	$.155 \\ .156$	.158 .159	.161 .162	.165	.168	.171	.174	.176	.179	93.
94	.152	.155	. 158	.161	.163	.166	.169,	.172	.175	.177	.180	94
94.5	.153	.156	.159	.162	.164	.167	.170	.173	.176	.179	.182	94.
95 95	.154	.157	.160	.163	.166	.169	.172	.175	.178	.180	.183	95
95.5	.155	.158	.161	.164	.167	.170	.173	.176	.179	.182	.185	95.
96	.156	.159	.162	.165	168	.171	.174	.177	.180	.183	.186	96
96.5	.157	.160	.163	.166	.169	.172	.175	.178	. 181	.184	.187	96.
97	.159	.162	.165	.168	.171	.174	.177	.180	.183	.186	.189	97
97.5	.160	.163	.166	.169	.172	.175	.178	.181	.184	.187	.190	97.
98	.161	.164	.167	.170	.173	.176	.179	.182	.185	.188	.191	98
98.5	.162	.165	.168	.171	.175	.178	.181	.184	. 187	.190	.193	98.
99	. 163	.166	.169	.173	.176	.179	.182	.185	.188	.191	.194	99
99.5	.164	.167	.171	.174	.177	.180	.183	.186	.189	.192	. 195	99.
100	.165	.169	.172	.175	.178	.181	.184	.188	.191	.194	.197	100

## TABLE IX.—REDUCTION OF BAROMETER READINGS TO FREEZING. METRICAL.

(Jelinek and Hann. Anleitung z. met. Beob. Wien, 1884, p. 116.)
Millimetres.

C.	400	410	427	430	440	450	160	470	480	490	500	510	520	530	540	550	C.
								AD	D.								
10 9 8 7 6	.66 .59 .52 .46	.67 .60 .54 47 .40	.69 .62 .55 .48 .41	.70 .63 .56 .49 .42	.72 .65 .58 .50 .43	.74 .66 .59 .52 .44	.75 .68 .60 .53 .45	.77 .69 .62 .54 .46	.79 .71 .63 .55 .47	.80 .72 .64 .56 .48		.84 .75 .67 .58	.85 .77 .68 .60 .51	.87 .78 .69 .61	.88 .80 .71 .62 .53		-10
5 4 3 2 1	,33 ,26 ,20 ,13 ,07	.34 .27 .20 .13 .07	.34 .27 .21 .14 .07	.35 28 .21 .14 .07	.36 .29 .22 .14 .07	.37 .29 .22 .15 .07	.38 .30 .23 .15 .08	.38 .31 .23 .15 .08	.39 .31 .24 .16 .08	.40 .32 .24 .16 .08	.41 .33 .25 .16 .08	.42 .33 .25 .17	.43 .34 .26 .17 .09	.43 .35 .26 .17	.44 .35 .27 .18 .09	.45 .36 .27 .18 .09	
							\$	ивт	RACT		-	2					
0 1 2 3 4	.00 .07 .13 .20 .26	.00 .07 .13 .20 .27	.00 .07 .14 .21 .27	.00 .07 .14 .21	.00 .07 .14 .22 .29	.00 .07 .15 .22 .29	.00 .08 .15 .23	.00 .08 .15 .23 .31	.00 .08 .16 .24 .31	.00 .08 .16 .24 .32	.00 .08 .16 .25 .33	.00 .08 .17 .25 .33	.00 .09 .17 .26 .34	.00 .09 .17 .26 .35	.00 .09 .18 .27 .35	00 .09 .18 .27 .36	-
5 6 7 8 9	.33 .39 .46 .52 .59	,33 ,40 ,47 ,54 ,60	.34 .41 .48 .55 .62	.35 .42 .49 .56 .63	.36 .43 .50 .57 .65	.37 .44 .51 .59	.38 .45 .53 .60 .68	.38 .46 .54 .61 .69	.39 .47 .55 .63 .71	.40 .48 .56 .64 .72	.41 .49 .57 .65	.42 .50 .58 .67 .75	.42 .51 .59 .68 .76	.43 .52 .61 .69 .78	.44 .53 .62 .71 .79	.45 54 .63 .72 .81	-
10 11 12 13 14	.65 .72 .77 .85	.67 .74 .80 .87	.69 .75 .82 .89 .96	.70 .77 .84 .91 .98	.72 .79 .86 .93 1.00	.73 .81 .88 .95 1.03	.75 .83 .90 .98 1.05	.77 .84 .92 1.00 1.07	.78 .86 .94 1.02 1.10		.82 .90 .98 1.06 1.14	1.08	.85 .93 1.02 1.10 1.19	1.12		.90 .99 1.08 1.17 1.26	10 11 15 13 14
15 16 17 18 19		1.20	1.10 1.16 1.23	$1.12 \\ 1.19 \\ 1.26$	1.08 1.15 1.22 1.29 1.36	1.17 $1.25$ $1.32$	$1.20 \\ 1.27 \\ 1.35$	$\frac{1,30}{1.38}$		1.28 $1.36$ $1.44$	$\frac{1,39}{1,47}$	1.33 $1.41$ $1.50$		1.38 $1.47$ $1.56$	$\frac{150}{1.58}$	1.43	16 16 17 18
20 21 22 23 24	1.37 1.43 1.50	1.34 1.40 1.47 1.54 1.60	$\frac{1.44}{1.50}$	1.47 $1.54$ $1.61$	1.57	1.54 $1.61$ $1.69$	1.57 $1.65$ $1.72$	1.76	1.64 $1.72$ $1.80$	1.68 $1.76$ $1.84$	1.71 1.79 1.87	1.74 $1.83$ $1.91$	1.78	1.81 $1.90$ $1.98$		1.88	20 21 22 28 24
25 26 27 28 29	1.69		1.91		1.86 $1.93$ $2.00$	1.83 1.90 1.98 2.05 2.12	1.95 $2.02$ $2.10$	1.91 1.99 2.06 2.14 2.22	1,95 2,03 2,11 2,19 2,26	$\frac{2.15}{2.23}$			2.12 2.20 2.28 2.37 2.45	$\frac{2.33}{2.41}$	2,29 2.37 2.46	2.42	25
30 31 32 33 34 35	1.95 2.02 2.08 2.15 2.21 2.27		2.12 2.18 2.25 2.32	2.10 2.17 2.24 2.31 2.38 2.45	2.22 2,29 2,36 2,43	$\frac{2.41}{2.49}$	2.47	2.29 2.37 2.44 2.52 2.60 2.67	2.34 2.42 2.50 2.57 2.65 2.73	2.47 $2.55$ $2.63$ $2.71$	$\frac{2.68}{2.76}$	2.49 2.57 2.65 2.74 2.82 2.90	2.62 $2.71$ $2.79$	2.59 2.67 2.76 2.84 2.93 3.01	$2.81 \\ 2.90 \\ 2.98$	2.68 2.77 2.86 2.95 3.04 3.13	30 31 32 33 34 35

IX.—BAROMETER TO FREEZING. METRICAL.
Millimetres.

C.	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	C.
		À						AD	D.								
-10 - 9 - 8 - 7 - 6	0.90 .81 .72 .63 .54	.92 .83 .73 .64 .55		.95 .85 .76 .66	.97 .87 .77 .68 .58	.98 .88 .79 .69	1.00 .90 .80 .70 .60	1.02 .91 .81 .71 .61	1.03 .93 .83 .72 .62	1.05 .94 .84 .73 .63	1.06 .96 .85 .74 .64	1.08 .97 .86 .76 .65	1.10 .99 .88 .77 .66	1.11 1.00 .89 .78 .67	1.13 1.01 .90 .79 .68	1.15 1.03 .92 .80 .69	-10 - 8 - 8 - 7
5 4 3 2 1	.45 .36 .27 .18	.46 .37 .27 .18	.37	.47 .38 .28 .19 .10	.48 .39 .29 .19	.49 .39 .29 .20	.50 .40 .30 .20	.51 .41 .30 .20 .10	.52 .41 .31 .21 .10	.52 .42 .31 .21 .10	.53 .43 .32 .21 .11	.54 .43 .32 .22 .11	.55 .44 .33 .22 .11	.56 .45 .33 .22 .11	.56 .45 .34 .23 .11	.57 .46 .34 .23 .11	- 4 - 4 - 5 - 1
							s	UВТ	RACT								
0 1 2 3 4	.00 .09 .18 .27 .36	.09 .18 .27	.09	.00 .10 .19 .28 .38	.10	.00 .10 .20 .29 .39	.00 .10 .20 .30 .40	.00 .10 .20 .30 .41	.00 .10 .21 .31 .41	.00 .10 .21 .31 .42	.11 .21 .32	.11 .22 .32	.00 ,11 .22 .33 .44	.00 .11 .22 .33 .44	.00 .11 .23 .34 .45	.00 .11 .23 .34 .46	1 2 8 4
5 6 7 8 9	.45 .54 .63 .72 .81	.46 .55 .64 .73 .82	.56	.47 .57 .66 .76 .85	.48 .58 .67 .77 .87	.49 .59 .68 .78 .88	.50 .60 .70 .80	.51 .61 .71 .81 .91	.51 .62 .72 .82 .93	.52 .63 .73 .84 .94	.53 .64 .74 .85 .95	.54 .65 .75 .86 .97	.55 .66 .77 .88 .98	.56 .67 .78 .89 1.00	.56 .68 .79 .90 1.01	.57 .69 .80 .91 1.03	-
10 11 12 13 14	.90 ,99 1.08 1.17 1.26	1.19	.93 1.02 1.12 1.21 1.30	.95 1.04 1.14 1.23 1.32	.96 1.06 1.16 1.25 1.35	.98 1.08 1.17 1.27 1.37	1.29		1.03 1,13 1.23 1.34 1.44	$\frac{1.25}{1.36}$	$\frac{1.17}{1.27}$	1.08 1.18 1.29 1.40 1.51	1.09 1.20 1.31 1.42 1.53	$\begin{array}{c} 1.11 \\ 1.22 \\ 1.33 \\ 1.44 \\ 1.55 \end{array}$	1.13 1.24 1.35 1.46 1.58	1.48	10 11 11 11 11 11 11 11 11 11 11 11 11 1
15 16 17 18 19	1.35 1.43 1.52 1.61 1.70	1.37 1.46 1.55 1.64 1.73	1.39 1.49 1.58 1.67 1.76	1.42 $1.51$ $1.61$ $1.70$ $1.79$	1.44 1.54 1.63 1.73 1.83	1.47 1.57 1.66 1.76 1.86	1.59	$\frac{1.72}{1.82}$	1.54 1.64 1.75 1.85 1.95	1.88	1.59 1.70 1.80 1.91 2.01	1.61 1.72 1.83 1.94 2.04	1.63 1.75 1.86 1.97 2.07	1.66 1.77 1.88 2.00 2.11	1.69 1.80 1.91 2.02 2.14	1.71 1.83 1.94 2.05 2.17	15 16 17 18
20 21 22 23 24	1.79 1.88 1.97 2.06 2.15		1.86 1.95 2.04 2.13 2.23	1.89 1.98 2.08 2.17 2.27	1.92 2.02 2.11 2.21 2.31	1.96 2.05 2.15 2.25 2.34	1.99 2.05 2.19 2.28 2.38	2.02 2.12 2.22 2.32 2.42	2.05 2.16 2.26 2.36 2.46	$\frac{2.19}{2.29}$	2.12 2.22 2.33 2.43 2.54	2.15 2.26 2.36 2.47 2.58	2.18 2.29 2.40 2.51 2.62		2.25 2.36 2.47 2.58 2.70	2.28 2.39 2.51 2.62 2.73	20 21 22 28 24
25 26 27 28 29	2.24 2.33 2.42 2.51 2.59	2.28 2.37 2.46 2.55 2.64	2.32 2.41 2.50 2.60 2.69	$\begin{array}{c} 2.36 \\ 2.45 \\ 2.55 \\ 2.64 \\ 2.74 \end{array}$	2.40 2.50 2.59 2.69 2.78	2.44 2.54 2.64 2.73 2.83	2.48 2.58 2.68 2.78 2.88	2.52 2.62 2.72 2.82 2.92	2.56 2.67 2.77 2.87 2.97	2.60 2.71 2.81 2.92 3.02	2.65 2.75 2.86 2.96 3.07	2.69 2.79 2.90 3.01 3.11	2.73 2.84 2.94 3.05 3.16	2.77 2.88 2.99 3.10 3.21	2.81 2.92 3.03 3.14 3,25	3.19	25
30 31 32 33 34 35	2.68 2.77 2.86 2.95 3.04 3.13	2,73 2,82 2,91 3,00 3,09 3,18	3.15		2.88 2.97 3.07 3.16 3.26 3.36	3.32	2.98 3.08 3.17 3.27 3.37 3.47	3.23 3.33	3.07 3.18 3.28 3.38 3.48 3.58	3.12 3.23 3.33 3.43 3.54 3.64	3.17 3.28 3.38 3.49 3.59 3.70	3.22 3.33 3.43 3.54 3.65 3.75	3.27 3.38 3.49 3.59 3.70 3.81		3.37 3.48 3.59 3.70 3.81 3.92	3.42 3.53 3.64 3.75 3.87 3.98	30 31 32 38 34 35

IX.—BAROMETER TO FREEZING. METRICAL.

ı-						MILLIAN	netres.					
	<b>c.</b>	700	710	720	730	740	750	760	770	780	790	C.
ĺ						AD	D.					
	-10 - 9.5 - 9 - 8.5 - 8 - 7.5	1.15 1.09 1.03 .97 .92 .86	1.16 1.10 1.05 .99 .93 .87	1.18 1.12 1.06 1.00 .94 .88	1.20 1.14 1.08 1.02 .96 .90	1.21 1.15 1.09 1.03 97	1.23 1.17 1.11 1.05 .98 .92	1.25 1.18 1.12 1.06 1.00 .93	1.26 1.20 1.13 1.07 1.01 .94	1.28 1.21 1.15 1.08 1.02 .96	1.29 1.23 1.16 1.09 1.03 .97	-10 - 9.5 - 9.5 - 8.5 - 8 - 7.5
	- 7 - 6.5 - 6 - 5.5 - 5 - 4.5	.80 .75 .69 .63 .57	.81 .76 .70 .64 .58 .52	.83 .77 .71 .65 .59	.84 .78 .72 .66 .60 .54	.85 .79 .73 .67 .61	.86 .80 .74 .67 .61	.87 .81 .75 .68 .62 .56	.88 .82 .76 .69 .63	.89 .83 .77 .70 .64 .58	.91 .84 .78 .71 .65	- 7 - 6.5 - 6 - 5.5 - 5 - 4.5
	- 4 - 3.5 - 3 - 2.5 - 2 - 1.5 - 1 - 0.5	.46 .40 .34 .28 .23 .17 .11	.47 .41 .35 .29 .23 .18 .12	.47. .41 .35 .29 .24 .18 .12	.48 .42 .36 .30 .24 .18 .12 .06	.48 .42 .36 .30 .24 .18 .12	.49 .43 .37 .31 .25 .18 .12 .06	.50 .44 .37 .31 .25 .19 .12	.50 .44 .38 .32 .25 .19 .13	.51 .45 .38 .32 .26 .19 .13	.52 .45 .39 .33 .26 .20 .13	- 4 - 8.5 - 8 - 2.5 - 2 - 1.5 - 1 - 0.5
	,		. '				RACT.		-		<del></del>	
	0 0.5 1 1.5 2 2.5	.00 .06 .11 .17 .23 .28	.00 .06 .12 .18 .23 .29	.00 .06 .12 .18 .24 .29	.00 .06 .12 .18 .24 .30	.00 .06 .12 .18 .24 .30	.00 .06 .12 .18 .25 .31	.00 .06 .12 .19 .25 .31	.00 .06 .13 .19 .25 .32	.00 .07 .13 .19 .26 .32	.00 .07 .13 .20 .26 .33	0 0.5 1 1.5 2
	3.5 4 4.5 5	.34 .40 · .46 .52 .57 .63	.35 .41 .46 .52 .58 .64	.35 .41 .47 .53 .59 .65	.36 .42 .48 .54 .60	.36 .42 .48 .54 .60	.37 .43 .49 .55 .61	.37 .43 .50 .56 .62 .68	.38 .44 .50 .57 .63 .69	.38 .45 .51 .57 .64 .70	.39 .45 .52 .58 .65	8 8.5 4 4.5 5.5
	6 6.5 7 7.5 8 8.5	.69 .75 .80 .85 .91	.70 .76 .81 .87 .93	.71 .77 .82 .88 .94 1.00	.72 .78 .83 .89 .95	.73 .79 .85 .91 .97 1.03	.74 .80 .86 .92 .98 1.04	.74 .81 .87 .93 .99 1.06	.75 .82 .88 .94 1.01 1.07	.76 .83 .89 .95 1.02 1.08	.77 .84 .90 .96 1.03 1.09	6.5 7 7.5 8 8.5
	9 9.5 10 10.5 11 11.5	1.03 1.09 1.14 1.20 1.26 1.31	1.04 1.10 1.16 1.22 1.27 1.33	1.06 1.12 1.18 1.23 1.29 1.35	1.07 1.13 1.19 1.25 1.31 1.37	1.09 1.15 1.21 1.27 1.33 1.39	1.10 1.16 1.22 1.29 1.35 1.41	1.12 1.18 1.24 1.30 1.36 1.43	1.13 1.19 1.26 1.32 1.38 1.45	1.14 1.21 1.27 1.34 1.40 1.47	1.16 1.22 1.29 1.36 1.42 1.49	9.5 10 10.5 11 11.5
	12 12.5 18 18.5 14 14.5	1.37 1.43 1.48 1.54 1.60 1.65 1.71	1.39 1.45 1.50 1.56 1.62 1.68 1.74	1.41 1.47 1.53 1.58 1.64 1.70 1.76	1.43 1.49 1.55 1.61 1.67 1.73 1.79	1.45 1.51 1.57 1.63 1.69 1.75 1.81	1.47 1.53 1.59 1.65 1.71 1.77 1.83	1.49 1.55 1.61 1.67 1.73 1.80 1.86	1.51 1.57 1.63 1.69 1.76 1.82 1.88	1.53 1.59 1.65 1.72 1.78 1.84 1.91	1.55 1.61 1.68 1.74 1.80 1.87 1.93	12 12.5 18 18.5 14 14.5

IX.—BAROMETER TO FREEZING. METRICAL.

					ARTITAL	metres.					
C.	700	710	720	780	740	750	760	770	780	790	C.
					SUBT	RACT.					
15° 15.5 16 16.5 17 17.5	1.71 1.77 1.83 1.88 1.94 2.01	1.74 1.79 1.85 1.91 1.97 2.03	1.76 1.82 1.88 1.94 2.00 2.06	1.79 1.84 1.90 1.96 2.02 2.08	1.81 1.87 1.93 1.99 2.05 2.11	1.83 1.89 1.96 2.02 2.08 2.14	1.86 1.92 1.98 2.04 2.11 2.17	1.88 1.95 2.01 2.07 2.13 2.20	1.91 1.97 2.04 2.10 2.16 2.23	1.93 2.00 2.06 2.13 2.19 2.26	15.5 15.5 16.5 16.5 17.5
18 18.5 19 19.5 20 20.5	2.05 2.11 2.17 2.23 2.28 2.34	2.08 2.14 2.20 2.26 2.31 2.37	2.11 2.17 2.23 2.29 2.35 2.40	2.14 2.20 2.26 2.32 2.38 2.44	2.17 2.23 2.29 2.35 2.41 2.47	2.20 2.26 2.32 2.38 2.44 2.50	2.23 2.29 2.35 2.41 2.48 2.54	2.26 2.32 2.38 2.45 2.51 2.57	2.29 2.35 2.41 2.48 2.54 2.60	2.32 2.38 2.45 2.51 2.57 2.64	18.5 19.5 19.5 20 20.5
21 21.5 22 22.5 28 23.5	2.39 2.45 2.51 2.57 2.62 2.68	2.43 2.48 2.54 2.60 2.66 2.72	2.46 2.52 2.58 2.64 2.70 2.75	2.50 2.56 2.62 2.67 2.73 2.79	2.53 2.59 2.65 2.71 2.77 2.83	2.57 2.63 2.69 2.75 2.81 2.87	2.60 2.66 2.72 2.78 2.85 2.91	2.63 2.69 2.76 2.82 2.88 2.95	2.67 2.73 2.79 2.86 2.92 2.98	2.70 2.76 2.83 2.89 2.96 3.02	21.5 22.5 22.5 23.5 23.5
24.5 24.5 25.5 26.5 26.5	2.73 2.79 2.85 2.91 2.96 3.02	2.77 2.83 2.89 2.95 3.00 3.06	2.81 2.87 2.93 2.99 3.05 3.11	2.85 2.91 2.97 3.03 3.09 3.15	2.89 2.95 3.01 3.07 3.13 3.19	2.93 2.99 3.05 3.11 3.17 3.23	2.97 3.03 3.09 3.15 3.22 3.28	3.01 3.07 3.13 3.19 3.26 3.32	3.05 3.11 3.17 3.23 3.30 3.36	3.09 3.15 3.21 3.28 3.34 3.41	24.5 24.5 25.5 26.5 26.5
27.5 28.5 28.5 29.5	3.08 3.13 3.19 3.24 3.30 3.36	3.12 3.18 3.23 3.29 3.35 3.40	3.16 3.22 3.28 3.34 3.40 3.45	3.21 3.27 3.33 3.39 3.44 3.50	3.25 3.31 3.37 3.43 3.49 3.55	3.29 3.36 3.42 3.48 3.54 3.60	3.34 3.40 3.46 3.52 3.58 3.65	3.38 3.44 3.51 3.57 3.63 3.69	3.43 3.49 3.55 3.62 3.68 3.74	3.47 3.53 3.60 3.66 3.73 3.79	27 27.5 28 28.5 29 29.5
30 30.5 31 31.5 32 32.5	3.42 3.47 3.53 3.58 3.64 3.69	3.46 3.52 3.58 3.64 3.69 3.75	3.51 3.57 3.63 3.69 3.75 3.80	3.56 3.62 3.68 3.74 3.80 3.86	3.61 3.67 3.73 3.79 3.85 3.91	3.66 3.72 3.78 3.84 3.90 3.96	3.71 3.77 3.83 3.89 3.95 4.01	3.76 3.82 3.88 3.94 4.00 4.07	3.81 3.87 3.93 3.99 4.06 4.12	3.85 3.93 3.98 4.05 4.11 4.17	30.5 31 31.5 32 32.5
33.5 34.5 34.5 35	3.75 3.81 3.87 3.92 3.98	3.81 3.87 3.92 3.98 4.04	3.86 3.92 3.98 4.04 4.09	3.92 3.97 4.03 4.09 4.15	3.97 4.03 4.09 4.15 4.21	4.02 4.08 4.14 4.20 4.27	4.08 4.14 4.20 4.26 4.32	4.13 4.19 4.25 4.32 4.38	4.18 4.25 4.31 4.37 4.44	4.24 4.30 4.36 4.43 4.49	88 88.5 84 84.5

#### TABLES X TO XIV.

#### BAROMETRIC HYPSOMETRY AND REDUCTION TO SEA-LEVEL.

#### INTRODUCTION.

#### BAROMETRIC HYPSOMETRY.

Many formulæ and tables have been devised for computing heights from barometric observations, and, conversely, for reducing barometer readings to sea-level, but nearly all are based on the formula of Laplace, published in 1805.

The complete formula includes a term dependent on the hygrometric conditions of the air column, but the use of this term is unsatisfactory, since we do not know the exact vertical distribution of moisture. Moreover, experience seems to indicate that this term will often introduce an error. For example, in the case of Mt. Washington, the full formula, as developed by Professor Ferrel, gives a height of 6,326 feet, computed from the mean of several years' observations, while the true height is 6,279 feet; of this error of 47 feet, at least 20 feet is due to the use of a term depending on the moisture. This term was ignored by Professor Guyot, and the International Meteorological Committee has recently decided to omit it in their tables, about to be issued.

The formula selected for the English tables was that of Professor Ferrel;<sup>2</sup> the form of table is that of Angot,<sup>3</sup> which has been found by far the most concise and convenient yet devised. The formula is:

$$H = 60521 (1 + .001017) \times 36 \times \log_{\bullet} \frac{30}{P} + H' \left\{ 1 + .001017 (t' + t - 100) \right\} + H'' (1 + .002606 \cos_{\bullet} 2 \Phi).$$

<sup>&</sup>lt;sup>1</sup> Mécanique Celeste IV, l'aris, 1805, p. 289.

<sup>&</sup>lt;sup>2</sup> Met. researches, iii. Washington, 1882, p. 22.

<sup>&</sup>lt;sup>3</sup>Ann. Soc. Met. France, Paris. 1880, xxviii, 202.

The three tables for the different parts of the formula need no explanation.

#### EXAMPLE.

#### METRICAL. .

For the metrical tables, those of Angot are copied, with the single omission of the part relating to the moisture contents of the air column.

#### REDUCTION TO SEA-LEVEL.

The above remarks relative to vapor pressure apply as well to these tables. A strict application of the formula requires a correction for the observed pressure, but experience has shown that, assuming the mean temperature of the air column to be the mean of that at the base and summit, the correction for observed pressure vanishes.

If a gravity correction be desired, it may readily be found by Table XIV. In practice, it will be best to draw up a table for the single elevation of the station, and for each two degrees, if the height be above 1,000 feet. The temperature to be used is an approximate mean for the previous 24 hours. If observations are made at equal intervals three times each day, the mean of the three, including the current observation, is to be taken.

The metrical tables are computed in the same manner as the English.

<sup>1</sup>Am. Journ Sc., New Haven, 1881, XXI, 366; XXII, 3.

TABLE X.—DETERMINATION OF HEIGHT BY THE BAROMETER. ENGLISH. PART I.

 $A = 60521 (1 + .001017) \times 36^{\circ} \times \log_{\bullet} \frac{30}{B}$ : Argument B

B.	.00	.01	.02	.03	.04	.03	.06	.07	.08	.09	B
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	
31.0	-893	-902	-911	-919	-928	-937	-945	-954	-963	-971	31.
30.9	-805	-814	-823	-832	-841	-849	-858	-867	-876	-884	30.
30.8	-717	-726	-735	-744	-753	-761	-770	-779	-788	-796	30.
30.7	-629	- 638	-647	-656	-665	-673	-682	-691	-700	-708	30.
30.6	-540	-549	-558	-567	-576	-584	-593	-602	-611	-620	30.
30.5	-451	-460	-469	-478	-487	-495	-504	-513	-522	-531 -442	30.
30.4	-361	-370	-379	-388	-397	-406	-415	-424	-433	-442	30.
30.3	-271	-280	-289	-298	-307	-316	-325	-334	-343	-352	30.
30. 2	-181	-190	-199	-208	-217	-226	-235	-244	-253	-262	30.
30.1	- 91	-100	-109	-118	-127	-136	-145	-154	-163	-172	30.
30.0	.0	- 9	- 18	- 27	- 36	- 46	- 55	- 64	- 73	- 82	30.
	+	+	+ 73 164	+	+ 55	+	+	+ 27	+	+	
29.9	91	82	73	64	55	46	36	27	18	9	29.
29.8	182	173	TILLE	155	146	137	127	118	109	100	29.
29.7	274	265	255	246	237	228	218	209	200	191	29.
29.6	366	357	347	338	329	320	310	301	292	283	29.
29.5	458	448	439	430	421	412	402	393	384	375	29.
29.4	550	540	531	522	513	504	494	485 578	476	467	29.
29.3	643	633	624	615	606	596	587	578	568	559	29.
29.2	736	726	717	708	699	689	680	671	661	652	29.
29.1	830	820	811	801	792	783	773	764	755	745	29.
29.0	924	914	905	895	886	876	867	858	848	839	29.
28.9	1018	1008	999	989	980	971	961	952	943	933	28.
28.8	1112	1102	1093	1084	1074	1065	1055	1046	943 1037	1027	28.
28.7	1207	1197	1188	1178	1169	1159	1150	1140	1131	1121	28.
28.6	1302	1292	1282	1273	1263	1254	1245	1235	1226	1216	28.
28.5	1397	1387	1377	1368	1358	1349	1339	1330	1321	1311	28.
28.4	1493	1483	1474	1464	1455	1445	1435	1425	1416	1406	28.
28.3	1589	1579	1569	1559	1550	1541	1531	1521	1512	1502	28.
28.2	1686	1676	1666	1656	1646	1636	1627	1617	1608	1598	28.
28.1	1783	1773	1763	1753	1743	1734	1724	1715	1705	1695	28.
28.0	1880	1870	1860	1850	1841	1831	1821	1811	1802	1792	28.
27.9	1977	1967	1957	1947	1938	1928	1918	1908	1899	1889	27.
27.8	2075	2065	2055	2045	2035	2025	2016	2006	1996	1986	27.
27.7	2173	2163	2153	2143	2133	2123	2114	2104	2094	2084	27.
27. 7	2272	2262	2252	2242	2232	2222	2213	2203	2193	2183	27.
27.5	2371	2361	2351	2341	2331	2321	2312	2302	2292	2282	27.
27.4	2470	2460	2450	2440	2430	2420	2411	2401	2391	2381	27.
27.3	2570	2560	2550	2540	2530	2520	2510	2500	2490	2480	27.
27. 9	2670	2660	2650	2640	2630	2620	2610	2600	2590	2580	27.
27.2	2770	2760	2750	2740	2730	2720	2710	2700	2690	2680	27.
27.0	2871	2861	2851	2841	2831	2821	2810	2800	2790	2780	27.
26.9	2972	2962	2952	2942	2932	2922	2911	2901	2891	2881	26.
26.8	3073	3063	3053	3043	3033	3023	3012	3002	2992	2982	26.
26. 7	3175	3164	3154	3144	3134	3124	3113	3103	3093	3083	26.
26.6	3277	3266	3256	3246	3236	3226	3215	3205	3195	3185	26.
26.5	3380	3370	3360	3349	3339	3329	3318	3308	3298	3287	26.
26.4	3483	3472	3462	3452	3441	3431	3421	3411	3400	3390	26.
26.3	3586	3575	3565	3555	3545	3534	3524	3514	3503	3493	26.
06.0	3690	3679	3669	3658	3648	3638	3627	3617			
26.2	3794	3783	3773	3762	3752	3742			3607	3596	26.
26.1 26.0	3899	3888	3878	3867	3857	3846	3731	3721	3710	3700	26.
10. U	0000	9000	9010	9001	9097	9940	3836	3825	3815	3804	26.

X.-BAROMETRIC HEIGHTS. ENGLISH.
PART I

В.	.00	.01	.02	03	.04	.05	.06	.07	.08	.09	B.
	Ft.	Ft.	Ft.								
26.0	3899	3888	3878	3867	3857	3846	3836	3825	3815	3804	26.
25.9	4004	3993	3983	3972	3962	3951	3941	3930	3920	3909	25.
25.8	4109	4098	4088	4077	4067	4056	4046	4035	4025	4014	25.
25.7	4215	4204	4193	4183	4172	4162	4151	4140	4130	4119	25.
25.6			100					A STATE OF THE STA	10000		25.
29.6	4321	4310	4300	4289	4278	4268	4257	4246	4236	4225	1
25.5	4428	4417	4406	4395	4385	4374	4363	4353	4342	4331	25. 25.
25.4	4535	4524	4514	4503	4492	4482	4471	4460	4449	4438	25.
25.3	4643	4632	4621	4610	4600	4589	4578	4567	4556	4545	25.
25.2	4751	4740	4729	4718	4708	4697	4686	4675	4664	4653	
25.1	4859	4848	4837	4826	4815	4805	4794	4783	4772	4761	25.
25.0	4968	4957	4946	4935	4924	4913	4903	4892	4881	4870	25.
24.9	5077	5066	5055	5044	5033	5022	5012	5001	4990	4979	24.
24.8	5186	5175	5164	5153	5142	5131	5121	5110	5099	5088	24.
24.7	5296	5285	5274	5263	5252	5241	5230	5219	5208	5197	24.
24.6	5407	5396	5385	5374	5363	5352	5340	5329	5318	5307	24.
94 2			5.100	5405	5.174	5100	5151	5110	5.100	5.110	24.
24.5	5518	5507	5496	5485	5474	5463	5451	5440	5429	5418	24.
24.4	5629	5618	5607	5596	5585	5574	5562	5551	5540	5529	24.
24.3	5741	5730	5719	5708	5696	5685	5674	5663	5651	5640	24.
24.2	5854	5843	5831	5820	5809	5797	5786	5775	5763	5752	24.
24.1	5967	5956	5944	5933	5922	5910	5899	5888	5876	5865	24.
24.0	6080	6069	6057	6046	6035	6023	6012	6001	5989	5978	24.
23.9	6194	6183	6171	6160	6148	6137	6125	6114	6103	6091	23.
23.8	6308	6297	6285	6274	6262	6251	6239	6228	6217	6205	23.
23.7	6423	6411	6400	6389	6377	6365	6354	6342	6331	6319	23.
23.6	6538	6526	6515	6503	6492	6480	6469	6457	6446	6434	23.
23.5	6654	6642	6630	6619	6607	6596	6584	6572	6561	6549	23.
23.4	6770	6758	6746	6735	6723	6712	6700	6688	6677	6665	23.
23.3	6887	6875	6863	6852	6840	6828	6816	6805	6793	6781	23.
23.2	7004	6992	6980	6969	6957	6945	6933	6922	6910	6898	23.
23.1	7121	7109	7097	7086	7074	7062	7050	7039	7027	7015	23.
10.54			2	F-10.1	1000	*****		m17/1		-100	23.
23.0	7239	7227	7215	7204	7192	7180	7168	7156	7144	7132	22.
22.9	7358	7346	7334	7322	7310	7298	7286	7274	7262	7250	
22.8	7477	7465	7453	7441	7429	7417	7405	7393	7381	7370	22.
22.7	7597	7585	7573	7561	7549	7537	7525	7513	7501	7489	22.
22.6	7717	7705	7693	7681	7669	7657	7645	7633*	7621	7609	22.
22.5	7838	7826 -	7814	7802	7790	7778	7765	7758	7741	7729	22.
22.4	7960	7948	7935	7923	7911	7899	7887	7874	7862	7850	22.
22.3	8082	8070	8058	8045	8033	8021	8009	7997	7984	7972	22.1
22.2	8204	8192	8180	8168	8155	8143	8131	8119	8107	8094	22.
22.1	8327	8315	8302	8290	8278	8265	8253	8241	8228	8216	22.
00 0	0151	0.100	8425	8413	8401	8389	8376	8364	8352	8339	22.
22.0	8451	8438	0.4-0	8538	8526		8501	8488	8476	8463	21.
21.9	8575	8563	8550			8513					21.
21.8	8700	8687	8675	8662	8650	8637	8625	8612	8600	8587	21.
21.7 21.6	8825 8951	8812 8938	8800 8926	8787 8913	8775 8900	8762 8888	8750 8875	8737 8863	8725 8850	8712 8838	21.
450							10				POH"
21.5	9077	9064	9051	9038	9025	9013	9001	8989	8976	8964	21.
21.4	9204	9161	9149	9166	9143	9181	9128	9115	9102	9090	21.
21.3	9332	9319	9306	9293	9280	9267	9254	9241	9228	9216	21.
21.2	9460	9447	9434	9422	9409	9396	9383	9370	9357	9345	21
21.1	9589	9576	9563	9550	9537	9524	9512	9499	9486	9473	2
21.0	9718	9705	9692	9679	9666	9653	9641	9628	9615	9602	9

X.-BAROMETRIC HEIGHTS. ENGLISH.
PART I.

В.	.00	.01	.02	.08	.04	.05	.06	.07	.06	.09	<b>B.</b>
٠	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	· Ft.	Ft.	!
21.0	9718	9705	9692	9679	9666	9653	9641	9628	9615	9602	21.0
20.9	9848	9835	9822	9809	9796	9783	9770	9757	9744	9731	20.9
20.8	9979	9966	9953	9940	9927	9914	9901	9888	9874	9861	20.8
20.7	10110	10097	10084	10071	10058	10045	10032	10019	10005	9992	20.7
20.6						10045	10163	10019	10137	10123	20.6
i	10242	10229	10216	10203	10190			!			1
20.5	10375	10362	10349	10335	10322	10309	10295	10282	10269	10255	20.5
20.4	10508	10495	10482	10469	10455	10442	10428	10415	10402	10388	20.4
20.8	10642	10629	10616	10602	10589	10575	10562	10548	10535	10521	20.
20.2	10776	10762	10749	10735	10722	10709	10696	10682	10669	10655	20.2
20.1	10911	10897	10884	10870	10857	10843	10830	10816	10803	10789	20.1
20.0	11047	11033	11019	11006	10992	10979	10965	10951	10938	10924	20.0
19.9	11184	11170	11156	11142	11128	11115	11101	11087	11074	11060	19.9
19.8	11321	11307	11293		11265	11252	11238	11224		11197	19.8
19.7	11459	11445	11431	11417	11404	11390	11376	11362	11349	111335	19. 7
19.6	11598	11584	11571	11557	11543	11529	11515	11502	11487	11473	19.
19.5		i i				11667	11654				19.5
19. 4	11737	11723	11709	11695	11681		11654	$11640 \\ 11779$	11626 11765	11612 11751	19,4
19.4		11863	11849	11835	11821	11807	11793 11933			11751	19.4
	12018	12004	11990	11976	11962	11948		11919	11905	11891	19.2
19.2	12160	12146	12132	12118	12103	12089	12075	12061	12046	12032	
19.1	12302	12288	12274	12260	12245	12231	12217	12203	12188	12174	19.1
19.0	12445	12431	12417	12402	12388	12374	12359	12345	12331	12316	19.0
18.9	12589	12575	12560	12546	12531	12517	12503	12488	12474	12459	18.9
18.8	12733	12719	12704	12690	12675	12661	12647	12632	12618	12603	18.8
18.7	12755	12864	12704 $12849$	12835	12820	12806	12791	12052	12018	12748	18.7
18.6	13025	13010	12995		12967	12952	12937	12923	12908	12894	18.6
18.5	13171	13156	13142	13127	13113	13098	13083	13069	13054	13040	18.5
18.4	13319	13304	13289	13127	13113	13245	13230	13215	13201	13186	18.4
18.4											18.4
	13468	13453	13438	13423	13408	13393	13378	, 13363 <sub> </sub> : 13512		13334	
18.2 18.1	13617	13602	13587	13572	13557	13542	13527	13512	13497	13483	18.2
18.1	13767	13752	13737	13722	13707	13692	13677	13662	13647	13632	18.1
18.0	13918	13903	13888	13873	13857	13842	13827	13812	13797	13782	18.0
17.9	14070	14055	14040	14025	14009	13994	13979	13964	13949	13933	17.9
17.8	14223	14208	14192	14177	14161	14146	14131	14116	14101	14085	17.8
17.7	14377	14361	14346	14331	14315	14300	14285	14269	14254	14238	17.7
17.6	14577	14515	14500	14331	14469	14454	14438	14423	14408	14392	17.6
	l			:							
17.5	14686	14670	14655	14639	14624	14608	14592	14577	14562	14546	17.5
17.4	14842	14826	14811	14795	14780	14764	14749	14733	14717	14702	17.4
17.3	14999	14983	14967	14952	14936	14920	14904	14888	14873	14857	17.8
17.2	15157	15141	15125	15109	15093	15078	15062	15046	15030	15014	17.2
17.1	15316	15300	15284	15268	15252	15236	15220	15204	15188	15172	17.1
17.0	15476	15460	15444	15428	15412	15396	15380	15364	15348	15332	17.0
16.9	15636	15620	15604	15428	$15412 \\ 15572$	15556	15540	15524	15508	$15332 \\ 15492$	16.9
16.8					15734		15701	15685	15669	15653	16.8
16.8 16.7	15798	15782		15750		15717 15879			15831	15815	16.8 16.7
10. 7	15960		15928	15912	15896	15879	15863	15847			10.7
16.6	16124	16108	16091	16075	16059	16042	<b>16</b> 026	16010	15993	15977	16.6
16.5	16288	16272	16255	16239	16223	16206	16190	16173	16157	16141	16.5
16.4	16454	16437	16420	16404	16387	16371	16354	16338	16321	16305	16.4
16.3	16621	16604	16587	16570	16553	16537	16520	16504	16487	16471	16.3
16.2	16789	16772	16755	16738	16721	16705	16688	16671	16654	16637	16.2
		16940	16923	16906	16889	16873	16856	16839	16822	16805	16.1
16.1	16957	TOO	1000								, LV
16. 1 16. 0	16957	17110	17093	17076	17059	17042	17025	17008	16991	16974	16.0

X.-BAROMETRIC HEIGHTS. ENGLISH. PART I.

В.	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09	B.
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	
16.0	17127	17110	17093	17076	17059	17042	17025	17008	16991	16974	16.6
15.9	17298	17281	17264	17247	17230	17212	17195	17178	17161	17144	15.
	17470	17453	17436	17419	17402	17384	17367	17350		17316	15.
15.7	17643	13626	17608	17591	17574	17556	17539	17522	17505	17488	15.
15.6		17800	17782	17765	17748	17730	17713	17695	17678	17661	15.
15.5	17992	17974	17957	17939	17922	17904	17887	17869	17852	17835	15.
15.4	18168	18150	18133	18115	18097	18080	18062	18044	18027	18009	15.
15.3	18346	18328	18310	18292	18274	18257	18239	18221	18203	18185	15.
15. 2	18525	18507	18489	18471	18453	18435	18417	18399	18381	18363	15.
15.1	18705	18687	18669	18651	18633	18615	18597	18579	18561	18543	15.
15.0	18886	18868	18850	18832	18814	18795	18777	18759	18741	18723	15.
14.9	19068	19050	19032	19014	18996	18977	18959	18941	18923	18905	14.
14.8	19252	19234	19215	19197	19179	19160	19142	19124	19105	19087	14.
14.7	19437	19418	19400	19381	19363	19344	19326	19307	19289	19271	14.
14.6	19623	19604	19585	19567	19548	19530	19511	19493	19474	19456	14.
14.5	19809	19790	19772	19753	19734	19716	19697	19678	19660	19641	14.
14.4	19997	19978	19959	19940	19921	19903	19884	19865	19846	19827	14.
14.3	20187	20168	20149	20130	20111	20092	20073	20054	20035	20016	14.
14.2	20379	20360	20341	20322	20303	20283	20264	20245	20226	20207	14.
14.1	20572	20553	20533	20514	20495	20475	20456	20437	20418	20399	14.
14.0	20765	20746	20726	20707	20688	20668	20649	20630	20611	20592	14.
13.9	20961	20941	20921	20902	20883	20863	20843	20824	20804	20785	13.
13.8	21158	21138	21118	21098	21078	21059	21039	21019	21000	20980	13.
$13.7 \\ 13.6$	$\frac{21357}{21557}$	21337 21537	21317 21517	21297 21497	21277 21477	21257 21457	21237 21437	21217 21417	21197 21397	21177 21377	13. 13.
13.5	21757	21737		7.0		12.00		0.00		TO LC	
13.4	21959	21939	21717	21697	21677	21657	21637	21617	21597	21577	13.
13.3	22162	22142	21919 22121	21899 22101	21879 22081	21858 22060	21838	21818	21798	21778	13.
13. 2	22368	22348	22327	22306	22285	22265	22244	22224	22000 22203	21980 22183	13.
13. 1	22576	22555	22534	22513	22493	22472	22451	22430	22409	22389	13.
13.0	22785	22764	22743	22722	22701	22680	22659	22638	22617	22596	13.
12.9	22995	22974	22953	22932	22911	22890	22869	22848	22827	22806	12.
12.8	23207	23186		23144	23123	23101	23080	23059	23038	23017	12.
12.7	23421	23400	23379	23357	23335	23314	23292	23271	23250		12.
12.6	23636	23614	23593	23571	23550	23528	23507	23485	23464	23443	12.
12.5	23854	23832	23810	23788	23766	23745	23723	23701	23679	23657	12.
12.4	24073	24051	24029	24007	23985	23963	23941	23919	23897	23875	12.
12.3	24294	24272	24250	24228	24206	24183	24161	24139	24117	24095	12.
12.2	24516	24494	24472	24450	24428	24405	24383	24361	24339	24317	12.
12.1	24739	24717	24694	24672	24650	24627	24605	24583	24561	24539	12.
12.0	24966	24943	24920	24897	24875	24852	24829	24807	24784	24762	12.
11.9	25194	25171	25148	25125	25102	25080	25057	25034	25011	24988	11.
11.8	25424	25401	25378	25355	25332	25309	25286	25263	25240	25217	11.
11.7		25633	25610	25587	25564	25540	25517	25494	25471	25448	11.
11.6	25889	25866	25842	25819	25790	25772	25749	25726	25703	25680	11.
11.5	26126	26102	26078	26055	26031	26007	25983	25960	25936	25913	11.
11.4		26340	26316	26292	26268	26245	26221	26197	26173	26149	11.
11.3	26604	26580	26556	26532	26508	26484	26460	26436	26412	26388	11
11.2	26845 27090	26821 27066	26797	26773	26749	26724	26700	26676	26652	26628	1
$\begin{array}{c} 11.1 \\ 11.0 \end{array}$	27090		27041	27016		26967	26943	26919	26894	26870	
	41000	27311	27286	27262	27237	27213	27188	27164	27139	27115	N.

## TABLE X.-DETERMINATION OF HIGHT BY THE BAROMETER.-ENGLISH. PART 2.

Correction for Temperature.

H[1+.001017(t'+t-100) or (100-t'-t)]: Arguments: H and t'+t-100 or 100-(t'+t).

						( — t) ]			3: H &D			_==	1	
t' + t - 100.	20.	40.	60.	80.	100.	200.	300.	400.	500.	600.	700.	800.	900.	1000.
°1 2 8 4 5	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0 1	0 0 1 1 1	0 1 1 1 2	0 1 1 2 2	1 1 2 2 3	1 1 2 2 3	1 1 2 3 4	1 2 2 3 4	1 2 3 4 5	1 2 3 4 5
6 7 8 9 10	0 0 0 0	0 0 0 0	0 0 0 1 1	0 1 1 1	1 1 1 1	1 1 2 2 2	2 2 2 3 3	2 3 3 4 4	3 4 4 5 5	4 4 5 5 6	4 5 6 7	5 6 7 7 8	5 6 7 8 9	6 7 8 9 10
11 12 13 14 15	0 0 0 0	0 0 1 1 1	1 1 1 1	1 1 1 1	1 1 1 2	2 2 3 3 3	3 4 4 4 5	4 5 5 6 6	6 6 7 7 8	7 7 8 9 9	8 8 9 10 11	9 10 11 11 11 12	10 11 12 13 14	11 12 13 14 15
16 17 18 19 20	0 0 0 0	1 1 1 1	1 1 1 1	1 1 2 2	2 2 2 2 2 2	3 4 4 4	5 5 6 6	7 7 7 8 8	8 9 9 10 10	10 10 11 12 12	11 12 13 14 14	13 14 15 15 16	15 16 16 17 18	16 17 18 19 20
21 22 28 24 25	0 0 0 0	1 1 1 1	1 1 1 1 2	2 2 2 2 2	2 2 2 2 3	4 4 5 5 5	6 7 7 7 . 8	9 9 9 10 10	11 11 12 12 13	13 13 14 15 15	15 16 16 17 18	17 18 19 20 20	19 20 21 22 23	21 22 23 24 25
26 27 28 29 30	1 1 1 1	1 1 1 1	2 2 2 2 2	2 2 2 2 2	3 3 3 3	5 6 6 6	8 8 9 9	11 11 11 12 12	13 14 14 15 15	16 16 17 18 18	19 19 20 21 21	21 22 23 24 24	24 25 26 27 27	26 27 28 30 31
31 32 33 34 35	1 1 1 1	1 1 1 1	2 2 2 2 2	3 3 3 3	3 3 3 4	6 7 7 7 7	9 10 10 11 11	13 13 13 14 14	16 16 17 17 18	19 20 20 21 21	22 22 23 24 25	25 26 27 28 28	28 29 30 31 32	32 33 34 35 36
36 37 38 39 40	1 1 1 1	1 2 2 2 2	2 2 2 2 2	3 3 3 3	4 4 4 4	7 8 8 8 8	11 11 12 12 12	15 15 15 16 16	18 19 19 20 20	22 23 23 24 24 24	26 26 27 28 28	29 30 31 32 33	33 34 35 36 37	37 38 39 40 41
41 42 48 44 45	1 1 1 1	2 2 2 2 2	3 3 3 3	3 4 4 4	4 4 4 5	8 9 9 9	13 13 13 13 14	17 17 18 18 18	21 21 22 22 22 23	25 26 26 27 27	29 30 31 31 32	33 34 35 36 37	38 38 39 40 41	42 43 44 45 46
46 47 48 49 50	1 1 1 1 1	2 2 2 2 2	3 3 3 3	4 4 4 4 4	5 5 5 5 5	9 10 10 10 10	14 14 15 15 15	19 19 20 20 20 20	23 24 24 25 25 25	28 29 29 30 31	33 33 34 35 36	37 38 39 40 41	42 43 44 45 46	47 48 49 50 51

X.—BAROMETRIC HEIGHTS. ENGLISH.
Correction for Temperature.

					Tectio	1101	rempe	rature	·			
t. 184 186	1000	2000	<b>300</b> 0	4000	5000	6000	7000	8000	9000	10000	20000	<b>80000</b>
1	1	2	3	4	5	6	7	8	9	10	20	31
2	2	4	6	8	10	12	14	16	18	20	41	61
3	3	· 6	9	12	15	18	21	24	27	31	61	92
4	4	8	12	16	20	24	28	33	37	41	81	122
5	5	10	15	20	25	31	36	41	46	51	102	153
6	6	12	18	24	31	37	43	49	55	61	122	183
7	7	14	21	28	36	43	50	57	64	71	142	214
8	8	16	24	33	41	49	57	65	73	81	163	244
9	9	18	27	37	46	55	64	73	82	92	183	275
10	10	20	31	41	51	61	71	81	92	102	204	305
11	11	22	34	45	56	67	78	90	101	112	224	336
12	12	24	37	49	61	73	85	98	110	122	244	366
13	13	26	40	53	66	79	93	106	119	132	265	397
14	14	28	43	57	71	85	100	114	128	142	285	427
15	15	31	46	61	76	92	107	122	137	153	305	458
16	16	33	49	65	81	98	114	130	147	163	326	488
17	17	35	52	69	86	104	121	138	156	173	346	519
18	18	37	55	73	92	110	128	147	165	183	366	549
19	19	39	58	77	97	116	135	155	174	193	387	580
20	20	41	61	81	102	122	142	163	183	204	407	611
21	21	43	64	86	107	128	150	171	192	214	427	641
22	22	45	67	90	112	134	157	179	201	224	448	672
23	23	47	70	94	117	140	164	187	211	234	468	702
24	24	49	73	98	122	147	171	195	220	244	488	733
25	25	51	76	102	127	153	178	204	229	254	509	763
26	26	53	79	106	132	159	185	212	238	265	529	794
27	27	55	82	110	137	165	192	220	247	275	549	824
28	28	57	85	114	142	171	199	228	256	285	570	855
29	30	59	89	118	147	177	207	236	266	295	590	885
30	31	61	92	122	153	183	214	244	275	305	611	916
31	32	63	95	126	158	189	221	252	284	315	631	946
32	33	65	98	130	163	195	228	260	293	326	651	977
33	34	67	101	134	168	201	235	269	302	336	672	1007
34	35	69	104	138	173	208	242	277	311	346	692	1038
35	36	71	107	143	178	214	249	285	321	356	712	1068
36	37	73	110	147	183	220	256	293	330	366	733	1099
37	38	75	113	151	188	226	264	301	339	376	753	1129
38	39	77	116	155	193	232	271	309	348	387	773	1160
39	40	79	119	159	198	238	278	317	357	397	794	1190
40	41	81	122	163	204	244	285	326	366	407	814	1221
41	42	83	125	167	209	250	292	334	375	417	834	1252
42	43	85	128	171	214	256	299	342	385	427	855	1282
43	44	88	131	175	219	263	306	350	394	438	875	1313
44	45	90	134	179	224	269	313	358	403	448	895	1343
45	46	92	137	183	229	275	321	366	412	458	916	1374
46 47 48 49 50	47 48 49 50 51	94 96 98 100 102	140 143 147 150 153	187 191 195 199 204	234 239 244 249 254	281 287 293 299 305	328 335 342 349 356	374 383 391 399 407	421 430 440 449 458	468 478 488 499 509	936 956 977 997 1018	1404 14°

TABLE X.—DETERMINATION OF HEIGHTS BY THE BAROMETER. ENGLISH.
PART III.

Correction for Latitude Plus from 0° to 44°; Minus from 46° to 90°.  $H^+$  (1+ .002606 cos. 2  $\varphi$  : Argument  $H^+$  and  $\varphi$ .

Н"	90.	S5	10 80	15 75	20 70	22 68	24 66	26 64	28 62	30 60	32 58	34 56	36 54	3× 52	40 50	42 48	44
1000 1500 2000 2500 3000	3 4 5 6 8	3 4 5 6 8	2 4 5 6 7	2 3 4 5 6	2 43 4 5 6	2 3 4 5 6	2 3 4 4 5	2 2 3 4 5	1 2 3 4 4	1 2 3 3 4	1 2 2 3 3	1 1 2 2 3	1 1 2 2 2 2	1 1 1 2 2	0 1 1 1 1	0 0 1 1 1	0 0 0 0 0
3500 4000 4500 5000 5500	9 10 12 13 14	9 10 12 13 14	9 10 11 12 13	8 9 10 11 12	7 8 9 10 11	7 8 9 9	6 7 8 9 10	5 6 7 8 9	5 6 7 7 8	5 6 6 7	4 5 6 6	3 4 4 5 5	3 4 4 5	2 3 3 4	2 2 2 3	1 1 1 1 2	0 0 0 0 1
6000 6500 7000 7500 8000	16 17 18 19 21	15 17 18 19 20	14 16 17 18 19	13 15 16 17 18	12 13 14 15 16	11 12 13 14 15	11 11 12 13 14	10 10 11 12 13	9 9 10 11 12	8 8 9 10 10	7 8 8 9 9	6 7 7 8	5 6 6 7	4 4 4 5 5	3 3 4 4	22222	1 1 1 1 1
8500 9000 9500 10000 10500	22 23 25 26 27	22 23 25 26 27	21 22 23 25 26	19 20 21 23 24	17 18 19 20 21	16 17 18 19 20	15 16 17 18 18	14 14 15 16 17	12 13 14 14 14 15	11 12 12 13 14	10 10 11 11 11 12	8 9 9 10 10	7 7 8 8 9	5 6 6 6 7	4 4 4 5 5	959999	1 1 1 1 1
11000 11500 12000 12500 13000	29 30 31 32 34	28 30 31 32 34	27 28 30 31 32	25 26 27 28 29	22 23 24 25 26	21 22 23 24 24 24	19 20 21 22 23	18 18 19 20 21	16 17 17 18 19	14 15 16 16 17	13 13 14 14 14 15	11 11 12 12 13	9 9 10 10 11	7 7 8 8	5 6 6 6	3 3 4 4	1 1 1 1 1
13500 14000 14500 15000 15500	35 36 38 39 40	35 36 37 39 40	33 34 36 37 38	30 31 33 34 35	27 28 29 30 31	25 26 27 28 29	24 25 25 26 27	22 22 28 24 25	20 20 21 22 23	18 18 19 20 20	16 16 17 17 18	13 14 14 15 15	11 11 12 12 13	9 10 10 10	6 6 7 7 7	4 4 4 4 4	1 1 1 1 1
16000 16500 17000 17500 18000	42 43 44 45 47	41 43 44 45 46	39 41 42 43 44	36 37 38 39 40	32 33 34 35 36	30 31 32 33 34	28 29 30 31 32	26 26 27 28 29	23 24 25 25 26	21 21 22 23 23	18 19 20 20 21	16 16 17 17 17 18	13 14 14 14 14 15	10 11 11 11 11 12	7 8 8 8	4 5 5 5 5	1 2 2 2 2
$\begin{array}{c} 18500 \\ 19000 \\ 19500 \\ 20000 \\ 20500 \end{array}$	48 49 51 52 53	48 49 50 52 53	46 47 48 49 50	42 43 44 45 46	37 38 39 40 41	35 36 37 38 39	32 33 34 35 36	30 30 31 32 33	27 28 28 29 30	24 25 25 26 27	21 22 22 23 24	18 19 19 20 20	15 16 16 16 16	12 12 13 13 13	9 9 9 9	5 6 6 6	22222
$\begin{array}{c} 21000 \\ 21500 \\ 22000 \\ 22500 \\ 23000 \end{array}$	55 56 57 58 60	54 55 57 58 59	52 53 54 55 57	47 48 49 50 52	42 43 44 45 46	39 40 41 42 43	37 38 39 39 40	34 34 35 36 37	30 31 32 33 33	27 28 29 29 30	24 25 25 26 26 26	21 21 22 22 22 23	17 18 18 18 19	13 14 14 14 15	10 10 10 10 16 11	6 6 6 6	22222
23500 24000 24500 25000	61 62 64 65	61 62 63 64	58 59 60 61	53 54 55 56	47 48 49 50	44 45 46 47	41 42 43 44	38 38 39 40	34 35 36 36	31 31 32 32	27 28 28 29	23 24 24 25	19 20 20 20 20	15 15 16 16	11 11 11 11	7 7 7 7	2222

## X.-DETERMINATION OF HEIGHTS BY THE BAROMETER. ENGLISH.

Correction for Height.

Height.  Feet.  3000 4000 5000 6000 7000 8000 9000 10000	Correc	etion +.
Feet.	Upper Station.	Lower Station
3000	0	1
4000	1	1
5000	1	2
6000	2	3
7000	2	5
8000	. 3	6
	4	7
10000	5	
	6	••
12000	7	
13000	8	
14000	9	
15000	10	

## TABLE XI.—DETERMINATION OF HEIGHT BY THE BAROMETER. METRICAL. (Taken from Angot.)

$$H = 18405 \left[ 1 + \frac{1}{273} \left( \frac{t + t}{2} \right) \right] (1 + .0026 \cos, 2 \varphi) \left( 1 + \frac{H + 15986}{6366200} \right) \log \frac{P}{760}.$$

Part I contains  $18405 \times \frac{P}{760}$ : Argument P.

Part II " correction for temperature: Argument,  $\frac{t+t'}{2}$  and H.

Part III " " latitude and height: Argument, latitude and height.

### EXAMPLE.

Pic du Midi : 
$$P' = 570.3$$
.  $t' = -5.9$  Base :  $P = 765.5$ .  $t = 7.0$ 

Latitude =  $44^{\circ}$ .

Part I . . . . 570.3 = 2296
. . . . . 765.5 -58
Difference . . . . . . 2354

Part II 2354 and  $\frac{7.0 - 5.9}{2}$  6

Part III 2354 and  $\frac{44^{\circ}}{2}$  7

 $H = 2367$ 

TABLE XI.—DETERMINATION OF HEIGHT BY THE BAROMETER.

METRICAL.

PART I.

mm.	0	1	2	8	4	5	6	7	8	9
	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.
770 7 <b>6</b> 0	-105 00	-115 - 11	-125 - 21	-136 - 32	-146 - 42	-156 - 53	-167 - 63	-177 - 73	-187 - 84	-197 - 94
750	+ 106	+ 95	+ 85	+ 74	+ 63	$^{+}_{53}$	+	+ 32	+ 21	+
740	213	202	192	181	170	159	149	138	127	117
730 720	322 432	311 421	300 410	289 399	278 388	267 377	257 366	$\begin{array}{c c} 246 \\ 355 \end{array}$	$\begin{array}{c} 235 \\ 344 \end{array}$	224 333
710	544	533	522	510	499	488	477	466	454	443
700 690	657 772	646 761	635 749	623 738	612 726	600 715	589	578	567	555
680	889	877	866	854	842	831	703 819	692 807	680 796	669 784
670 660	1008	996	984	972	960	948	936	924	913	901
	1128	1116	1104	1091	1079	1067	1055	1043	1031	1019
650 640	$\begin{array}{c} 1250 \\ 1374 \end{array}$	$1237 \\ 1361$	$1225 \\ 1349$	$1213 \\ 1336$	1201 1324	$\frac{1189}{1312}$	$1176 \\ 1299$	1164 1287	$1152 \\ 1274$	1140 1262
680	1500	1487	1474	1462	1449	1436	1424	1411	1399	1386
620 610	$\begin{array}{c} 1628 \\ 1757 \end{array}$	1615 1744	$1602 \\ 1731$	1588 1718	1576 1705	$1563 \\ 1692$	$1550 \\ 1679$	1538 1666	$1525 \\ 1653$	1512 1640
	1101	1/11	1101	1/10		1092	1079	1000	1000	1040
600 590	1890 2024	1876 2010	1863 1997	1850	1836 1970	1823	1810	1797	1784	1771 1903
580	2161	2147	2133	1983 2119	2106	$1956 \\ 2092$	$\frac{1943}{2078}$	$\frac{1930}{2065}$	1916 2051	2038
570 560	2300 2441	2286	2272	2258	2244	2230	2216	2202	2188	2174
	2441	2427	2413	2398	2384	2370	2356	2342	2328	2314
550 540	$\begin{array}{c} 2585 \\ 2732 \end{array}$	$2571 \\ 2717$	$\begin{array}{c} 2556 \\ 2702 \end{array}$	$2542 \\ 2687$	$2527 \\ 2673$	$2513 \\ 2658$	2498 2643	2484 2629	$2470 \\ 2614$	2455
580	2881	2866	2851	2836	2821	2806	2791	2776	2761	2600 2747
520 510	3033 3189	3018 3173	3003 3157	$\begin{array}{c} 2987 \\ 3142 \end{array}$	$\begin{array}{c} 2972 \\ 3126 \end{array}$	$2957 \\ 3111$	2942 3095	2927 3080	2911 3064	2896 3049
500 490	3347 3508	$\frac{3331}{3492}$	3315 3476	3299 3460	$\frac{3283}{3443}$	$\frac{3267}{3427}$	$\begin{array}{c} 3252 \\ 3411 \end{array}$	3236 3395	3220 3379	3204 3363
480	3673	3657	3640	3623	3607	3590	3574	3558	3541	3525
470 460	3842 4014	3825 3996	3808 3979	3791 3962	3774 3944	3757 3927	3740 3910	3723 3893	3707 3876	3690 3859
450	4189	4171	4154	4136	4118	<b>4</b> 101	4083	4066	4048	4031
440	4369	4351	4333	4315	4297	4279	4261	4243	4225	4207
430 420	4553 4741	4534 4722	4516 4703	4497 4684	4479 4665	4460 4646	4442 4627	4424 4609	4405 4590	4387 4571
41ŏ	4933	4914	4894	4875	4856	4836	4817	4798	4779	4760
400	5130	5110	5090	5070	5050	5030	5010	4990	4971	4952
<b>390</b> <b>380</b>	5333 5540	5313 5519	$\frac{5292}{5498}$	$\begin{array}{c} 5272 \\ 5477 \end{array}$	5252 5456	5231 5435	5211 5415	5190 5394	5170 5374	5150 5353
370	5753	5732	5710	<b>5689</b>	5668	<b>5646</b>	5625	5604	5582	5561
860	5972	5950	5928	5906	5884	5862	5840	5818	5797	5775
350	6197	6174	6151	6129	6107	6084	6062	6039	6017	5995
340 330	6429 6668	6405 6643	6382 6619	6359 6595	6336 6571	6313 6548	6289 6524	6266 6500	$6243 \\ 6477$	6220 6453
320 310	6914	6889	6864	6840	6815	6791	6766	6742	6717	6693
800	7168 7430	7142 7403	7116 7377	7091 7 <b>35</b> 1	7066 7325	7040 7299	7015 7272	6990 7246	6965 7220	6939 7194

XI.-DETERMINATION OF HEIGHT BY THE BAROMETER. METRICAL. PART II.

' Correction for Temperature C.

Height	1°	2.	8.	4.	5.	6.	7.	8.	9.	10.	<b>30</b> .	80.	40°
m.	m.	m.	m.	m.	m.	m	m.	m.	m.	m.	m.	m.	m.
100	0	1	1	2	2	. 2	3	3	3	4	7	11	15
200	ĭ	2	1 2	3	4	. 4	5	6	7	7	15	22	29
300	1	2	$\frac{1}{3}$	4	6	7	8	9	10	1i	$\tilde{2}\tilde{2}$	33	44
400	2	3	4	6	7	9	10	12	13	15	29	44	59
500	2	4	6	7	9	11	13	15	17	18	37	55	73
600	2	4	7	9	11	13	15	18	20	22	44	66	88
700	$\tilde{3}$	5	8	10	13	15	18	21	23	26	51	77	103
800	3	6	9	12	15	18	21	24	26	29	59	88	117
900	3	7	10	13	17	20	23	26	30	33	66	99	132
1000	4	7	11	15	18	•22	26	29	33	37	73	110	147
1100	4		10	10			90	90	00	40	01	101	100
1100   1200	4 4	8 9	12 13	16 18	$\frac{20}{22}$	24 26	28 31	32 35	36 40	40 44	81 88	$\frac{121}{132}$	162 176
1300	5	10	14	19	24	20 29	33	38	43	48	95	143	191
1400	5	10	15	21	26 ·	31	36	41	46	51	103	154	206
1500	6	11	17	22	28	33	39	44	50	55	110	165	220
1600	6	11	18	24	29	35	41	47	53	59	117	176	235
1700	6	13	19	25	31	37	44	50	56	62	125	187	250
1800	7	13	20	26	33	40	46	53	60	66	132	198	264
1900   2000	7 7	14 15	$\begin{array}{c} 21 \\ 22 \end{array}$	28 29	35 37	42 44	49 51	56 59	63 66	70 73	140 147	209 220	279
2000	'	19	22	29	31	44	31	08	00	13	147	220	293
2100	8	15	23	31	39	46	54	62	69	77	154	231	308
2200	8	16	24	32	40	48	57	65	73	81	162	242	323
2800	8	17	25	34	42	51	59	68	76	84	169	253	338
2400	9	18	26	35	44	53	62	71	79	88	176	264	352
2500	9	18	28	37	<b>4</b> 6	55	64	73	83	92	184	275	367
2600	10	19	29	38	48	57	67	76	86	95	191	286	382
2700	10	20	30	40	50	60	69	<b>79</b>	89	99	198	297	396
2800	10	21	31	41	51	62	72	82	93	103	206	308	411
2900	11	21	32	43	53	64	75	85	96	106	213	319	426
3000	11	22	33	44	55	66	77	88	99	110	220	330	440
1 0100		00	94	40	57	68	80	91	102	114	228	341	455
3100 3200	$\begin{array}{c c} 11 \\ 12 \end{array}$	23 24	34 35	46 47	57 59	70	82	94	102	114 117	235	352	470
3300	12	24 24	36	48	61	72	85	97	100	121	242	363	484
8400	13	25	37	50	62	75	87	100	112	125	250	374	499
3500	13	26	39	51	64	77	90	103	116	129	257	386	515
												25.5	
3600	13	26	40	53	66	79	93	106	119	132	264	396	529
3700	14	27	41	54	68	82	95	109   112	$\frac{122}{126}$	136	$\begin{array}{c c} 272 \\ 279 \end{array}$	407	543     558
3800	14 14	28 29	42 43	56 57	70 72	84 86	98 100	112	120	140 143	286	418 429	573
4000	15	30	45	59	73	88	103	117	132	143	294	440	587
±000	10	30	11	"			100		-0-				ا :
5000	18	37	55	73	92	110	129	146	165	183	367	551	734
6000	22	44	66	88	110	132	154	176	198	220	440	661	881
7000	26	51	77	103	129	154	180	206	231	257	514	771	1028
<u> </u>				!							<u> </u>		

TABLE XI.-DETERMINATION OF HEIGHT BY THE BAROMETER. METRICAL PART III.

. Correction for Latitude and Height.

Height.	0.	5.	10.	15.	20.	25.	30.	35.	40.	45.	50.	33.	60.	65.	70.	75.	80.	85
m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m.	m	m	m.	m.	m.	m.
100 200 300 400	1 1 2 2	1 1 2 2	1 1 2 2	0 1 1 2	0 1 1 2	0 1 1 2	0 1 1 2	0 1 1 1	0 1 1 1	0 1 1 1	0 1 I 1	0 0 1 1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0	000
500 600 700 800 900	3 3 4 4 5	3 4 4 5	3 4 4 5	2 3 4 4	2 3 3 4 4	2 3 4 4	21213334	21212122	313131313	- 21 21 21 20	1 2 2 2 2	1 1 1 1 2	1 1 1 1	1 1 1 1	0 0 0 1 1	0 0 0 0	0 0 0 0	000
$\begin{array}{c} 1000 \\ 1100 \\ 1200 \\ 1300 \\ 1400 \end{array}$	5 6 7 7	5 6 7 7	5 6 7 7	5 6 7 7	5 6 6 7	4 5 5 6 6	4 4 5 6	4 4 5 5	3 4 4 4	3 3 3 4 4	21 21 52 55 55	212121213	1 2 2 2 2 2	1 1 1 1 2	1 1 1 1 1	0 1 1 1 1	0 0 0 0 0	0000
$\begin{array}{c} 1500 \\ 1600 \\ 1700 \\ 1800 \\ 1900 \end{array}$	8 9 10 10	8 9 9 10 10	8 9 9 10	8 8 9 9	78899	77880	67778	6 6 7 7	5 5 6 6	4 4 5 5 5	3 4 4 4 4 4	5 3 3 3 4	212121313	22222	1 1 1 1 2	1 1 1 1 1	1 1 1 1	0000
$2000 \\ 2100 \\ 2200 \\ 2300 \\ 2400$	11 11 12 13 13	11 11 12 13 13	11 11 12 12 13	10 11 11 12 12	10 10 11 11 11 12	9 9 10 10 11	8 9 9 10 10	7 8 9 9	777888	6 6 7 7	5 5 6 6	4 4 5 5	3 3 4 4	21 3 3 3 3	21 21 21 21 21	1 1 1 1 2	1 1 1 1 1	0000
2500 2600 2700 2800 2900	14 14 15 16 16	14 14 15 16 16	13 14 15 15 16	13 13 14 15 15	12 13 13 14 14	11 12 12 13 13	11 11 11 12 12	10 10 11 11 11	8 9 9 10 10	22220	6 7 7 7	5 6 6 6	4 4 5 5	3 4 4 4	2 2 3 3 3	2 2 2 2 2 2	1 1 1 1 1	1 1 1 1
3000 3100 3200 3300 3400	17 17 18 19 19	17 17 18 19 19	16 17 18 18 19	16 16 17 17 17 18	15 15 16 17 17	14 14 15 16 16	13 13 14 14 14 15	12 12 13 13 13	10 11 11 12 12	9 9 10 10 10	****	6 1 1 1 1 1	5 5 6 6	4 4 5 5	3 3 3 3 4	2 2 2 2 3	1 1 1 1 2	1 1 1 1 1 1 1
3500 3600 3700 3800 3900	20 20 21 22 22	20 20 21 22 22	19 20 20 21 22	19 19 20 20 21	18 18 19 19 20	17 17 17 18 19	15 16 16 17 17	14 14 15 15 16	12 13 13 14 14	11 11 11 12 12	9 9 10 10 10	22222	6 6 7 7 7 7	5 5 6 6	1 1 1 1 1	3 3 3 3	22222	1 1 1 1 1 1
4000 4500 5000 5500 6000 6500 7000	23 26 29 33 36 40 43	23 26 29 33 36 40 43	22 25 29 32 35 39 42	21 24 28 31 34 38 41	20 23 26 30 33 36 39	19 22 25 28 31 34 37	17 20 23 26 29 31 34	16 18 21 23 26 29 31	14 17 19 21 23 26 28	13 14 16 19 21 23 25	11 12 14 16 18 20 22	9 10 12 14 15 17	7 9 10 11 13 15 16	6 7 8 9 11 12 14	5 6 7 8 9 10	3 4 5 6 7 8 9	2 2 3 4 5 6 7	1 1 2 3 4 5

TABLE XII.—REDUCTION OF BAROMETER READINGS TO SEA-LEVEL. ENGLISH.

(Original.)

						(01.,	(inai.)						
Ft.	-30.	<b>-20</b>	-10°	0.	10°	20°	80.	40°	50°	80.	70°	80°	80.
	in.	in.	in.	in.	in.	in.	in.						
20 40 60 80	.05	.03 .05 .08 .10	.02 .05 .07 .10	.02 .05 .07 .10	.02 .05 .07 .10	.02 .05 .07 .09	.02 .05 .07 .09	.02 .04 .06 .08	.02 .04 .06 .08	.02 .04 .06 .08	.02 .04 .06 .08	.02 .04 .06 .08	.02 .04 .06 .08
100 120 140 160 180	.15 .18 .20	.13 .15 .18 .20 .23	.12 .15 .17 .20 .22	.12 .15 .17 .19 .22	.12 .14 .17 .19 .22	.12 .14 .16 .19 .21	.12 .14 .16 .19 .21	.11 .13 .15 .18 .20	.11 .13 .15 .18 .20	.11 .13 .15 .18 .20	.11 .13 .15 .17 .19	.10 .12 .14 .17 .19	.10 .12 .14 .16 .18
200 220 240 260 280	.26 .28 .31 .33 .36	.25 .28 .30 .33	.25 .27 .30 .32 .35	.24 .27 .29 .32 .34	.24 .26 .29 .31 .33	.23 .26 .28 .30 .33	.23 .25 .27 .30 .32	.22 .24 .27 .29 .31	.22 .24 .26 .29 .31	.22 .24 .26 .28 .30	.21 .23 .25 .28 .30	.21 .23 .25 .27 .29	.20 .22 .24 .26 .28
800 820 840 860 880	.39 .41 .44 .46 .49	.38 .41 .43 .46 .48	.37 .40 .42 .45 .47	.36 .39 .41 .44 .46	.36 .38 .40 .43 .45	.35 .37 .39 .42 .44	.34 .37 .39 .41 .44	.34 .36 .38 .41 .43	.33 .35 .37 .40 .42	.32 .34 .36 .39 .41	.32 .34 .36 .38 .40	.31 .33 .35 .37 .39	.30 .32 .34 .36 .38
400 420 440 460 480	.52 .54 .57 .59 .62	.51 .53 .56 .58 .61	.49 .52 .54 .57 .59	.48 .51 .53 .56	.47 .50 .52 .55	.46 .49 .51 .54	.46 .48 .50 .53 .55	.45 .47 .49 .52	.44 .46 .48 .51	.43 .45 .47 .50	.42 .44 .46 .49 .51	.41 .43 .45 .48	.40 .42 .44 .47 .49
500 520 540 560 580	.64 .67 .69 .72 .75	.63 .66 .68 .71 .73	.62 .64 .67 .69 .71	.60 .63 .65 .68	.59 .61 .64 .66	.58 .60 .62 .65 .67	.57 .59 .61 .64 .66	.56 .58 .60 .63 .65	.55 .57 .59 .61	.54 .56 .58 .60	.53 .55 .57 .59 .61	.52 .54 .56 .58 .60	.51 .53 .55 .57 .59
600 620 640 660 680	.77 .80 .82 .85 .87	.76 .78 .80 .83 .85	.74 .76 .78 .81 .83	.72 .75 .77 .79 .82	.71 .73 .75 .78 .80	.69 .72 .74 .76 .79	.68 .70 .72 .75	.67 .69 .71 .74 .76	.65 .67 .69 .72	.64 .66 .68 .71 .73	.63 .65 .67 .69	.62 .64 .66 .68 .70	.61 .63 .65 .67
700 720 740 760 780	.90 .92 .95 .97	.88 .90 .93 .95	.86 .88 .91 .93 .96	.84 .87 .89 .91	.82 .85 .87 .89	.81 .83 .85 .88	.79 .81 .83 .86	.78 .80 .82 .84 .86	.76 .78 .80 .83 .85	.75 .77 .79 .81 .83	.73 .75 .77 .80 .82	.72 .74 .76 .78 .80	.71 .73 .75 .77
800 820 840 860 880	1.03 1.05 1.08 1.10 1.13	1.00 1.03 1.05 1.08 1.10	.98 1.01 1.03 1.06 1.08	.96 .98 1.01 1.03 1.05	.94 .96 .99 1.01 1.03	.92 .94 .96 .99 1.01	.90 .92 .94 .97 .99	.88 .90 .93 .95	.87 .89 .91 .93 .95	.85 .87 .89 .92 .94	.84 .86 .88 .90 .92	.82 .84 .86 .88 .90	.81 .83 .85 .86 .88
900 920 940 960 980 1000	1.15 1.18 1.20 1.23 1.25 1.28	1.13 1.15 1.18 1.20 1.23 1.25	1.10 1.13 1.15 1.17 1.20 1.22	1.08 1.10 1.13 1.15 1.17 1.20	1.06 1.08 1.10 1.13 1.15 1.17	1.03 1.06 1.08 1.11 1.13 1.15	1.01 1.03 1.05 1.08 1.10 1.12	.99 1.01 1.03 1.06 1.08 1.10	.97 .99 1.01 1.04 1.06 1.08	.96 .98 1.00 1.02 1.04 1.06	.94 .96 .98 1.00 1.02 1.04	.92 .94 .96 .98 1.00	.90 .92 .94 .9 <sup>6</sup> .9

XII.-REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	-30°	-20	-10	0.	101	20°	30	40	50"	60.	70-	80	90
1000 1020 1040 1060 1080	in. 1.28 1.31 1.33 1.35 1.35	in. 1.25 1.28 1.30 1.32 1.35	in. 1.22 1.25 1.27 1.29 1.32	in. 1.20 1.22 1.25 1.27 1.29	in. 1.17 1.20 1.22 1.24 1.27	in. 1.15 1.17 1.20 1.22 1.24	in. 1.12 1.14 1.17 1.19 1.21	in. 1.10 1.12 1.15 1.17 1.19	in. 1.08 1.10 1.13 1.15 1.17	in. 1.06 1.08 1.10 1.12 1.15	in. 1.04 1.06 1.08 1.10 1.12	in. 1.02 1.04 1.06 1.08 1.10	in. 1.00 1.00 1.00 1.00 1.00
1100	1.40	1.37	1.34	1.31	1.29	1.26	1.23	1.21	1.19		1.14	1.12	1.16
1120	1.43	1.40	1.37	1.34	1.31	1.28	1.25	1.23	1.21		1.16	1.14	1.15
1140	1.45	1.42	1.39	1.36	1.34	1.31	1.28	1.26	1.23		1.18	1.16	1.16
1160	1.48	1.45	1.42	1.39	1.36	1.33	1.30	1.28	1.25		1.20	1.18	1.16
1180	1.50	1.47	1.44	1.41	1.38	1.35	1.32	1.30	1.27		1.22	1.20	1.16
1200	1.53	1.49	1.46	1.43	1.40	1.37	1.34	1.32	1.29	1.27	1.24	1.22	1.2
1220	1.55	1.52	1.49	1.46	1.43	1.40	1.37	1.34	1.31	1.29	1.26	1.24	1.2
1240	1.58	1.54	1.51	1.48	1.45	1.42	1.39	1.36	1.34	1.31	1.29	1.26	1.2
1260	1.60	1.57	1.54	1.51	1.48	1.44	1.41	1.38	1.36	1.33	1.31	1.28	1.2
1280	1.63	1.59	1.56	1.53	1.50	1.46	1.43	1.40	1.38	1.35	1.33	1.30	1.2
1300	1.65	1.61	1.58	1.55	1.51	1.48	1.45 $1.47$ $1.50$ $1.52$ $1.54$	1.42	1.40	1.37	1.35	1.32	1.3
1320	1.68	1.64	1.61	1.57	1.54	1.50		1.44	1.42	1.39	1.37	1.34	1.3
1340	1.70	1.66	1.63	1.60	1.56	1.53		1.47	1.44	1.41	1.39	1.36	1.3
1360	1.72	1.68	1.65	1.62	1.58	1.55		1.49	1.46	1.43	1.41	1.38	1.3
1380	1.75	1.71	1.68	1.64	1.61	1.57		1.51	1.48	1.45	1.43	1.40	1.3
1400	1.77	1.73	1.70	1.66	1.63	1.59	1.56	1.53	1.50	1.54	1.45	1.42	1.4
1420	1.80	1.76	1.72	1.69	1.65	1.61	1.58	1.55	1.52		1.47	1.44	1.4
1440	1.82	1.78	1.75	1.71	1.68	1.64	1.61	1.58	1.55		1.49	1.46	1.4
1460	1.85	1.81	1.77	1.73	1.70	1.66	1.63	1.60	1.57		1.51	1.48	1.4
1480	1.87	1.83	1.79	1.76	1.72	1.68	1.65	1.62	1.59		1.53	1.50	1.4
1500	1.90	1.85	1.81	1.78	1.74	1.70	1.67	1.64	1.61	1.58	1.55	1.52	1.4
1520	1.92	1.88	1.84	1.80	1.76	1.72	1.69	1.66	1.63	1.60	1.57	1.54	1.5
1540	1.95	1.90	1.86	1.83	1.79	1.75	1.72	1.68	1.65	1.62	1.59	1.56	1.5
1560	1.97	1.92	1.88	1.85	1.81	1.77	1.74	1.70	1.67	1.64	1.61	1.58	1.5
1580	2:00	1.95	1.91	1.87	1.83	1.79	1.76	1.72	1.69	1.66	1.63	1.60	1.5
1600	2.02	1.97	1.93	1.89	1.85	1.81	1.78	1.74	1.71	1.68	1.65	1.62	1.60
1620	2.04	1.99	1.95	1.91	1.87	1.83	1.80	1.76	1.73	1.70	1.67	1.64	1.60
1640	2.07	2.02	1.98	1.94	1.90	1.86	1.83	1.79	1.75	1.72	1.69	1.66	1.60
1660	2.09	2.04	2.00	1.96	1.92	1.88	1.85	1.81	1.77	1.74	1.71	1.68	1.60
1680	2.12	2.07	2.03	1.98	1.94	1.90	1.87	1.83	1.79	1.76	1.73	1.70	1.60
1700	2.14	2.09	2.05	2.00	1.96	1.92	1.89	1.85	1.81	1.78	1.75	1.72	1.69
1720	2.16	2.11	2.07	2.02	1.98	1.94	1.91	1.87	1.83	1.80	1.77	1.74	1.71
1740	2.19	2.14	2.10	2.05	2.01	1.97	1.93	1.89	1.86	1.82	1.79	1.76	1.72
1760	2.21	2.16	2.12	2.07	2.03	1.99	1.95	1.91	1.88	1.84	1.81	1.78	1.74
1780	2.24	2.19	2.14	2.10	2.05	2.01	1.97	1.93	1.90	1.86	1.83	1.80	1.76
1800 1820 1840 1860 1880	2.26 2.29 2.31 2.34 2.36	2.21 2.24 2.26 2.28 2.31		2.12 $2.14$ $2.17$ $2.19$ $2.21$	2.07 2.09 2.12 2.14 2.17	2.03 2.05 2.08 2.10 2.12	1.99 2.01 2.04 2.06 2.08	1.95 1.97 2.00 2.02 2.04	1.92 1.94 1.96 1.98 2.00	1.88 1.90 1.92 1.94 1.96	1.85 1.87 1.89 1.91 1.93	1.82 1.84 1.85 1.87 1.89	1.78 1.80 1.82 1.84 1.86
1900 1920 1940 1960 1980 2000	2.38 2.41 2.43 2.45 2.48 2.50	2.33 2.36 2.38 2.40 2.43 2.45	2.28 2.31 2.33 2.35 2.37 2.39	2.23 2.26 2.28 2.30 2.32 2.34	2.19 2.21 2.24 2.26 2.28 2.30	2.14 2.16 2.19 2.21 2.23 2.25	2.10 2.12 2.15 2.17 2.19 2.21	2.06 2.08 2.10 2.12 2.14 2.16	2.02 2.04 2.06 2.08 2.10 2.12	1.98 2.00 2.02 2.04 2.06 2.08	1.95 1.97 1.99 2.01 2.03 2.05	1.91 1.93 1.95 1.97 1.99	1.88 1.90 1.91 1.93 1.95 1.97

XII.—REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	-30.	-20°	_10°	0.	10.	20.	30.	40°	50°	60.	70°	80°	90.
2000 2020 2040 2060 2080	in. 2.50 2.53 2.55 2.57 2.60	in. 2.45 2.47 2.50 2.52 2.54	in. 2.40 2.42 2.44 2.46 2.49	in. 2.35 2.37 2.39 2.41 2.44	in. 2.30 2.32 2.35 2.37 2.39	in 2.25 2.27 2.30 2.32 2.34	in. 2.21 2.23 2.25 2.27 2.29	in. 2.16 2.18 2.21 2.23 2.25	in. 2.12 2.14 2.16 2.18 2.20	in. 2.08 2.10 2.12 2.14 2.16	in. 2.04 2.06 2.08 2.10 2.12	'in. 2.00 2.02 2.04 2.06 2.08	in. 1.97 1.99 2.01 2.03 2.05
2100	2.62	2.56	2.51	2.46	2.41	2.36	2.31	2.27	2.22	2.18	2.14	2.10	2.07
2120	2.64	2.58	2.53	2.48	2.43	2.38	2.33	2.29	2.24	2.20	2.16	2.12	2.08
2140	2.67	2.61	2.56	2.51	2.46	2.41	2.36	2.31	2.27	2.22	2.18	2.14	2.10
2160	2.69	2.63	2.58	2.53	2.48	2.43	2.38	2.33	2.29	2.24	2.20	2.16	2.12
2180	2.71	2.65	2.60	2.55	2.50	2.45	2.40	2.35	2.31	2.26	2.22	2.18	2.14
2200	2.74	2.68	2.62	2.57	2.52	2.47	2.42	2.37	2.33	2.28	2.24	2.20	2.16
2220	2.76	2.71	2.65	2.59	2.54	2.49	2.44	2.39	2.35	2.30	2.26	2.22	2.18
2240	2.79	2.73	2.67	2.62	2.57	2.51	2.46	2.41	2.37	2.32	2.28	2.24	2.20
2260	2.81	2.75	2.69	2.64	2.59	2.53	2.48	2.43	2.39	2.34	2.30	2.26	2.22
2280	2.83	2.77	2.71	2.66	2.61	2.55	2.50	2.45	2.41	2.36	2.32	2.28	2.24
2800	2.86	2.80	2.74	2.68	2.63	2.57	2.52	2.47	2.43	2.38	2.34	2.30	2.26
2820	2.88	2.82	2.76	2.70	2.65	2.59	2.54	2.49	2.45	2.40	2.36	2.32	2.27
2840	2.91	2.85	2.79	2.73	2.67	2.62	2.57	2.52	2.47	2.42	2.38	2.34	2.29
2860	2.93	2.87	2.81	2.75	2.69	2.64	2.59	2.54	2.49	2.44	2.40	2.36	2.31
2880	2.95	2.89	2.83	2.77	2.71	2.66	2.61	2.56	2.51	2.46	2.42	2.38	2.33
2400	2.98	2.91	2.85	2.79	2.73	2.68	2.63	2.58	2.53	2.48	2.44	2.40	2.35
2420	3.00	2.94	2.87	2.81	2.75	2.70	2.65	2.60	2.55	2.50	2.46	2.41	2.37
2440	3.02	2.96	2.90	2.84	2.78	2.73	2.67	2.62	2.57	2.52	2.48	2.43	2.39
2460	3.05	2.98	2.92	2.86	2.80	2.75	2.69	2.64	2.59	2.54	2.50	2.45	2.41
2480	3.07	3.01	2.94	2.88	2.82	2.77	2.71	2.66	2.61	2.56	2.52	2.47	2.43
2500	3.09	3.03	2.96	2.90	2.84	2.79	2.73	2.68	2.63	2.58	2.54	2.49	2.45
2520	3.12	3.05	2.98	2.92	2.86	2.81	2.75	2.70	2.65	2.60	2.55	2.50	2.46
2540	3.14	3.08	3.01	2.95	2.89	2.83	2.78	2.72	2.67	2.62	2.57	2.52	2.48
2560	3.16	3.10	3.03	2.97	2.91	2.85	2.80	2.74	2.69	2.64	2.59	2.54	2.50
2580	3.19	3.12	3.05	2.99	2.93	2.87	2.82	2.76	2.71	2.66	2.61	2.56	2.52
2600	3.21	3.14	3.07	3.01	2.95	2.89	2.84	2.78	2.73	2.68	2.63	2.58	2.54
2620	3.24	3.17	3.10	3.03	2.97	2.91	2.86	2.80	2.75	2.70	2.65	2.60	2.55
2640	3.26	3.19	3.12	3.06	3.00	2.94	2.88	2.82	2.77	2.72	2.67	2.62	2.57
2660	3.28	3.21	3.14	3.08	3.02	2.96	2.90	2.84	2.79	2.74	2.69	2.64	2.59
2680	3.31	3.24	3.17	3.10	3.04	2.98	2.92	2.86	2.81	2.76	2.71	2.66	2.61
2700	3.33	3.26	3.19	3.12	3.06	3.00	2.94	2.88	2.83	2.78	2.73	2.68	2.63
2720	3.35	3.28	3.21	3.14	3.08	3.02	2.96	2.90	2.85	2.80	2.74	2.69	2.65
2740	3.38	3.31	3.24	3.17	3.10	3.04	2.98	2.92	2.87	2.82	2.76	2.71	2.67
2760	3.40	3.33	3.26	3.19	3.12	3.06	3.00	2.94	2.89	2.84	2.78	2.73	2.69
2780	3.42	3.35	3.28	3.21	3.14	3.08	3.02	2.96	2.91	2.86	2.80	2.75	2.71
2800	3.44	3.37	3.30	3.23	3.16	3.10	3.04	2.98	2.93	2.88	2.82	2.83	2.73
2820	3.47	3.39	3.32	3.25	3.18	3.12	3.06	3.00	2.95	2.89	2.84		2.74
2840	3.49	3.42	3.35	3.28	3.21	3.15	3.09	3.03	2.97	2.91	2.86		2.76
2860	3.51	3.44	3.37	3.30	3.23	3.17	3.11	3.05	2.99	2.93	2.88		2.78
2880	3.54	3.46	3.39	3.32	3.25	3.19	3.13	3.07	3.01	2.95	2.90		2.80
2900 2920 2940 2960 2980 <b>3000</b>	3.56 3.58 3.61 3.63 3.65 3.65	3.48 3.50 3.53 3.55 3.57 3.59	3.41 3.43 3.46 3.48 3.50 3.52	3.34 3.36 3.39 3.41 3.43 3.45	3.27 3.29 3.32 3.34 3.36 3.38	3.21 3.23 3.25 3.27 3.29 3.31	3.15 3.17 3.19 3.21 3.23 3.25	3.09 3.11 3.13 3.15 3.17 3.19	3.03 3.05 3.07 3.09 3.11 3.13	2.97 2.99 3.01 3.03 3.05 3.07	2.92 2.94 2.96 2.98 3.00 3.02	2.90   2.92	2.82 2.83 2.85 2 2

XII.-REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	<b>-30.</b>	-20°	-10°	0.	10°	20	30.	40	50.	60.	70.	80.	20.
8000 8020 8040 8060 8080	in. 3.67 3.70 3.72 3.74 3.77	in. 3.59 3.62 3.64 3.66 3.69	in. 3.52 3.54 3.57 3.59 3.61	in. 3.45 3.47 3.50 3.52 3.54	in. 3.38 3.40 3.43 3.45 3.47	in. 3.31 3.33 3.36 3.38 3.40	in. 3.25 3.27 3.29 3.31 3.33	in. 3.19 3.21 3.23 3.25 3.27	in. 3.13 3.15 3.17 3.19 3.21	in. 3.07 3.09 3.11 3.13 3.15	in. 3.02 3.03 3.05 3.07 3.09	in. 2.96 2.98 3.00 3.02 3.04	in. 2.91 2.92 2.94 2.96 2.98
3100	3.79	3.71	3.63	3.56	3.49	3.42	3.35	3.29	3.23	3.17	3.11	3.06	3.00
3120	3.81	3.73	3.65	3.58	3.51	3.44	3.37	3.31	3.24	3.18	3.13	3.07	3.02
3140	3.84	3.76	3.68	3.60	3.53	3.46	3.39	3.33	3.26	3.20	3.15	3.09	3.04
3160	3.86	3.78	3.70	3.62	3.55	3.48	3.41	3.35	3.28	3.22	3.17	3.11	3.06
3180	3.88	3.80	3.72	3.64	3.57	3.50	3.43	3.37	3.30	3.24	3.19	3.13	3.08
8200	3.90	3.82	3.74	3.66	3.59	3.52	3.45	3.39	3.32	3.26	3.21	3.15	3.10
8220	3.92	3.84	3.76	3.68	3.61	3.54	3.47	3.41	3.34	3.28	3.22	3.16	3.11
8240	3.95	3.87	3.79	3.71	3.63	3.56	3.49	3.43	3.36	3.30	3.24	3.18	3.13
8260	3.97	3.89	3.81	3.73	3.65	3.58	3.51	3.45	3.38	3.32	3.26	3.20	3.15
8280	3.99	3.91	3.83	3.75	3.67	3.60	3.53	3.47	3.40	3.34	3.28	3.22	3.17
3300	4.01	3.93	3.85	3.77	3.69	3.62	3.55	3.49	3.42	3.36	3.30	3.24	3.19
3320	4.04	3.95	3.87	3.79	3.71	3.64	3.57	3.51	3.44	3.38	3.32	3.26	3.20
3340	4.06	3.98	3.90	3.82	3.74	3.66	3.59	3.53	3.46	3.40	3.34	3.28	3.22
3360	4.08	4.00	3.92	3.84	3.76	3.68	3.61	3.55	3.48	3.42	3.36	3.30	3.24
3380	4.11	4.02	3.94	3.86	3.78	3.70	3.63	3.57	3.50	3.44	3.38	3.32	3.26
3409	4.13	4.04	3.96	3.88	3.80	3.72	3.65	3.59	3.52	3.46	3.40	3.34	3.28
3420	4.15	4.06	3.98	3.90	3.82	3.74	3.67	3.60	3.54	3.47	3.41	3.35	3.29
3440	4.18	4.09	4.00	3.92	3.84	3.76	3.69	3.62	3.56	3.49	3.43	3.37	3.31
3460	4.20	4.11	4.02	3.94	3.86	3.78	3.71	3.64	3.58	3.51	3.45	3.39	3.33
3480	4.22	4.13	4.04	3.96	3.88	3.80	3.73	3.66	3.60	3.53	3.47	3.41	3.35
8500	4.24	4.15	4.06	3.98	3.90	3.82	3.75	3.68	3.62	3.55	3.49	3.43	3.37
8520	4.26	4.17	4.08	4.00	3.92	3.84	3.77	3.70	3.63	3.57	3.50	3.44	3.38
8540	4.29	4.20	4.11	4.03	3.95	3.87	3.79	3.72	3.65	3.59	3.52	3.46	3.40
8560	4.31	4.22	4.13	4.05	3.97	3.89	3.81	3.74	3.67	3.61	3.54	3.48	3.42
8580	4.33	4.24	4.15	4.07	3.99	3.91	3.83	3.76	3.69	3.63	3.56	3.50	3.44
3690	4.35	4.26	4.17	4.09	4.01	3.93	3.85	3.78	3.71	3.65	3.58	3.52	3.46
3620	4,37	4.28	4.19	4.11	4.03	3.95	3.87	3.80	3.73	3.66	3.59	3.53	3.47
3640	4.40	4.31	4.22	4.13	4.05	3.97	3.89	3.82	3.75	3.68	3.61	3.55	3.49
3660	4.42	4.33	4.24	4.15	4.07	3.99	3.91	3.84	3.77	3.70	3.63	3.57	3.51
3680	4.44	4.35	4.26	4.17	4.09	4.01	3.93	3.86	3.79	3.72	3.65	3.57	3.53
8700	4.46	4.37	4.28	4.19	4.11	4.03	3.95	3.88	3.81	3.74	3.67	3.61	3.55
8720	4.48	4.39	4.30	4.21	4.13	4.05	3.97	3.90	3.82	3.75	3.69	3.62	3.56
8740	4.51	4.42	4.33	4.24	4.15	4.07	3.99	3.92	3.84	3.77	3.71	3.64	3.58
8760	4.53	4.44	4.35	4.26	4.17	4.09	4.01	3.94	3.86	3.79	3.73	3.66	3.60
8780	4.55	4.46	4.37	4.28	4.19	4.11	4.03	3.96	3.88	3.81	3.75	3.68	8.62
3800 3820 3840 3860 3880	$4.59 \\ 4.62 \\ 4.64$	4.48 4.50 4.52 4.54 4.56		4.30 4.32 4.34 4.36 4.38	4.21 4.23 4.26 4.28 4.30	4.13 4.15 4.17 4.19 4.21	4.05 4.07 4.09 4.11 4.13	3.98 4.00 4.02 4.04 4.06	3.90 3.92 3.94 3.96 3.98	3.83 3.85 3.87 3.89 3.91	3.77 3.78 3.80 3.82 3.84	3.73 3.75	3.64 3.65 3.67 3.69 3.71
8900 8920 8940 8960 8980 4000	4.70 4.73 4.75 4.77	4.58 4.60 4.63 4.65 4.67 4.69	4.49 4.51 4.54 4.56 4.58 4.60	4.40 4.42 4.45 4.47 4.49 4.51	4.32 4.34 4.36 4.38 4.40 4.42	4.23 4.25 4.27 4.29 4.31 4.33	4.15 4.17 4.19 4.21 4.23 4.25	4.08 4.09 4.11 4.13 4.15 4.17	4.00 4.02 4.04 4.06 4.08 4.10	3.93 3.95 3.96 3.98 4.00 4.02	3.86 3.88 3.89 3.91 3.93 3.95	3.81 3.83 3.85 3.87	3.73 3.75 3.77 3.79 3.81 3.83

XII-REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	-30·	-20.	70.	0.	100	00:		45:					
Ft.	-30	-20	-10.		10°	30.	80°	40°	20.	<del></del> -	70°	80°	80.
4000 4020 4040 4060 4080	in. 4.79 4.81 4.84 4.86 4.88	in. 4.69 4.71 4.74 4.76 4.78	in. 4.60 4.62 4.64 4.66 4.68	in. 4.51 4.53 4.55 4.57 4.59	in. 4.42 4.44 4.46 4.48 4.50	in. 4.33 4.35 4.37 4.39 4.41	in. 4.25 4.27 4.29 4.31 4.33	in. 4.17 4.19 4.21 4.23 4.25	in. 4.10 4.11 4.13 4.15 4.17	in. 4.02 4.04 4.06 4.08 4.10	in. 3.95 3.97 3.99 4.01 4.03	in. 3.89 3.90 3.92 3.94 3.96	in. 3.83 3.84 3.86 3.88 3.90
4100	4.90	4.80	4.70	4.61	4.52	4.43	4.35	4.27	4.19	4.12	4.05	3.98	3.91
4120	4.92	4.82	4.72	4.63	4.54	4.45	4.37	4.29	4.21	4.13	4.06	3.99	3.93
4140	4.95	4.85	4.75	4.65	4.56	4.47	4.39	4.31	4.23	4.15	4.08	4.01	3.95
4160	4.97	4.87	4.77	4.67	4.58	4.49	4.41	4.33	4.25	4.17	4.10	4.03	3.96
4180	4.99	4.89	4.79	4.69	4.60	4.51	4.43	4.35	4.27	4.19	4.12	4.05	<b>3</b> .98
4200	5.01	4.91	4.81	4.71	4.62	4.53	4.45	4.37	4.29	4.21	4.14	4.07	4.00
4220	5.03	4.93	4.83	4.73	4.64	4.55	4.46	4.38	4.30	4.22	4.15	4.08	4.01
4240	5.06	4.96	4.86	4.76	4.66	4.57	4.48	4.40	4.32	4.24	4.17	4.10	4.03
4260	5.08	4.98	4.88	4.78	4.68	4.59	4.50	4.42	4.34	4.26	4.19	4.12	4.05
4280	5.10	5.00	4.90	4.80	4.70	4.61	4.52	4.44	4.36	4.28	4.21	4.13	4.06
4300	5.12	5.02	4.92	4.82	4.72	4.63	4.54	4.46	4.38	4.30	4.23	4.15	4.08
4320	5.14	5.04	4.94	4.84	4.74	4.65	4.56	4.48	4.39	4.31	4.24	4.17	4.10
4340	5.17	5.06	4.96	4.86	4.76	4.67	4.58	4.50	4.41	4.33	4.26	4.18	4.11
4360	5.19	5.08	4.98	4.88	4.78	4.69	4.60	4.52	4.43	4.35	4.28	4.20	4.13
4380	5.21	5.10	5.00	4.90	4.80	4.71	4.62	4.54	4.45	4.37	4.30	4.22	4.15
4400	5.23	5.12	5.02	4.92	4.82	4.73	4.64	4.56	4.47	4.39	4.32	4.24	4.17/
4420	5.25	5.14	5.04	4.94	4.84	4.75	4.66	4.57	4.49	4.41	4.33	4.25	4.18
4440	5.28	5.17	5.06	4.96	4.86	4.77	4.68	4.59	4.51	4.43	4.35	4.27	4.20
4460	5.30	5.19	5.08	4.98	4.88	4.79	4.70	4.61	4.53	4.45	4.37	4.29	4.22
4480	5.32	5.21	5.10	5.00	4.90	4.81	4.72	4.63	4.55	4.47	4.39	4.31	4.24
4500	5.34	5.23	5.12	5.02	4.92	4.84	4.74	4.65	4.57	4.49	4.41	4.33	4.26
4520	5.36	5.25	5.14	5.04	4.94	4.85	4.76	4.67	4.58	4.50	4.42	4.34	4.27
4540	5.38	5.27	5.16	5.06	4.96	4.87	4.78	4.69	4.60	4.52	4.44	4.36	4.29
4560	5.40	5.29	5.18	5.08	4.98	4.89	4.80	4.71	4.62	4.54	4.46	4.38	4.31
4580	5.42	5.31	5.20	5.10	5.00	4.91	4.82	4.73	4.64	4.56	4.48	4.40	4.33
4600	5.44	5.33	5.22	5.12	5.02	4.93	4.84	4.75	4.66	4.58	4.50	4.42	4.35
4620	5.46	5.35	5.24	5.14	5.04	4.94	4.85	4.76	4.67	4.59	4.51	4.43	4.36
4640	5.49	5.38	5.27	5.16	5.06	4.96	4.87	4.78	4.69	4.61	4.53	4.45	4.38
4660	5.51	5.40	5.29	5.18	5.08	4.98	4.89	4.80	4.71	4.63	4.55	4.47	4.40
4680	5.53	5.42	5.31	5.20	5.10	5.00	4.91	4.82	<b>4.</b> 73	4.65	4.57	4.49	4.42
4700	5.55	5.44	5.33	5.22	5.12	5.02	4.93	4.84	4.75	4.67	4.59	4.51	4.43
4720	5.57	5.46	5.35	5.24	5.14	5.04	4.94	4.85	4.77	4.68	4.60	4.52	4.45
4740	5.60	5.48	5.37	5.26	5.16	5.06	4.96	4.87	4.79	4.70	4.62	4.54	4.47
4760	5.62	5.50	5.39	5.28	5.18	5.08	4.98	4.89	4.81	4.72	4.64	4.56	4.48
4780	5.64	5.52	5.41	5.30	5.20	5.10	5.00	4.91	4.83	4.74	4.66	4.58	4.50
4800 4820 4840 4860 4880	5.70 5.72	5.54 5.56 5.58 5.60 5.62	5.43 5.45 5.47 5.49 5.51	5.32 5.34 5.36 5.38 5.40	5.22 5.24 5.26 5.28 5.30	5.12 5.14 5.16 5.18 5.20	5.02 $5.04$ $5.06$ $5.08$ $5.10$	4.93 4.95 4.97 4.99 5.01	4.85 4.86 4.88 4.90 4.92	4.76 4.77 4.79 4.81 4.83	4.68 4.69 4.71 4.73 4.75		4.52 4.53 4.55 4.57 4.59
4900 4920 4940 4960 4980 5000	5.78 5.81 5.83	5.64 5.66 5.69 5.71 5.73 5.75	5.53 5.55 5.57 5.59 5.61 5.63	5.42 5.44 5.46 5.48 5.50 5.52	5.32 5.34 5.36 5.38 5.40 5.42	5.22 5.24 5.26 5.28 5.30 5.32	$\begin{array}{c} 5.12 \\ 5.14 \\ 5.16 \\ 5.18 \\ 5.20 \\ 5.22 \end{array}$	5.03 5.04 5.06 5.08 5.10 5.12	5.01	4.85 4.86 4.88 4.90 4.92 4.92	4.80 4.82 4.84	4.69 4.70 4.72 4.74 4.74	4.1

XII,-REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	<b>-80.</b>	-20°	-10°	0.	10.	50.	80.	40.	50.	60.	70.	80.	90.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
5000	5.87	5.75	5.63	5.52	5.42	5.32	5.22	5.12	5.03	4.94	4.86	4.77	4.69
5020	5.89	5.77	5.65	5.54	5.43	5.33	5.23	5.13	5.04	4.95	4.87	4.79	4.71
5040	5.91	5.79	5.67	5.56	5.45	5.35	5.25	5.15	5.06	4.97	4.89	4.80	4.72
5060	5.93	5.81	5.69	5.58	5.47	5.37	5.27	5.17	5.08	4.99	4.91	4.82	4.74
5080	5.95	5.83	5.71	5.60	5.49	5.39	5.29	5.19	5.10	5.01	4.93	4.84	4.76
5100	5.97	5.85	5.73	5.62	5.51	5.41	5.31	5.21	5.12	5.03	4.95	4.86	4.78
5120	5.99	5.87	5.75	5.64	5.53	5.43	5.33	5.23	5.13	5.04	4.96	4.87	4.79
5140	6.02	5.89	5.77	5.66	5.55	5.45	5.35	5.25	5.15	5.06	4.98	4.89	4.81
5160	6.04	5.91	5.79	5.68	5.57	5.47	5.37	5.27	5.17	5.08	5.00	4.91	4.83
5180	6.06	5.93	5.81	5.70	5.59	5.49	5.39	5.29	5.19	5.10	5.01	4.93	4.85
5200 5220 5240 5260 5280	6.08 6.10 6.12 6.14 6.16	5.95 5.97 6.00 6.02 6.04	5.83 5.85 5.88 5.90 5.92	5.72 5.74 5.76 5.78 5.80	5.63 5.65 5.67 5.69	5.51 5.52 5.54 5.56 5.58	5.41 5.42 5.44 5.46 5.48	5.31 5.32 5.34 5.36 5.38	5.21 5.22 5.24 5.26 5.28	5.12 5.13 5.15 5.17 5.19	5.03 5.04 5.06 5.08 5.10	4.95 4.96 4.98 5.00 5.01	4.87 4.88 4.90 4.92 4.93
5300	6.18	6.06	5.94	5.82	5.71	5.60	5.50	5.40	5.30	5.21	5.12	5.03	4.95
5320	6.20	6.08	5.96	5.84	5.73	5.62	5.51	5.41	5.31	5.22	5.13	5.05	4.97
5340	6.22	6.10	5.98	5.86	5.75	5.64	5.53	5.43	5.33	5.24	5.15	5.06	4.98
5360	6.24	6.12	6.00	5.88	5.77	5.66	5.55	5.45	5.35	5.26	5.17	5.08	5.00
5380	6.26	6.14	6.02	5.90	5.79	5.68	5.57	5.47	5.37	5.28	5.19	5.10	5.02
5400	6.28	6.16	6.04	5.92	5.81	5.70	5.59	5.49	5.39	5.30	5.21	5.12	5.04
5420	6.30	6.18	6.06	5.94	5.82	5.71	5.60	5.50	5.40	5.31	5.22	5.13	5.05
5440	6.33	6.20	6.08	5.96	5.84	5.73	5.62	5.52	5.42	5.33	5.24	5.15	5.07
5460	6.35	6.22	6.10	5.98	5.86	5.75	5.64	5.54	5.44	5.35	5.26	5.17	5.09
5480	6.37	6.24	6.12	6.00	5.88	5.77	5.66	5.56	5.46	5.37	5.28	5.19	5.10
5500	6.39	6.26	6.14	6.02	5.90	5.79	5.68	5.58	5.48	5.39	5.30	5.21	5.12
5520	6.41	6.28	6.15	6.03	5.92	5.81	5.70	5.59	5.49	5.40	5.31	5.22	5.13
5540	6.43	6.30	6.17	6.05	5.94	5.83	5.72	5.61	5.51	5.42	5.33	5.24	5.15
5560	6.45	6.32	6.19	6.07	5.96	5.85	5.74	5.63	5.53	5.44	5.35	5.26	5.17
5580	6.47	6.34	6.21	6.09	5.98	5.87	5.76	5.65	5.55	5.46	5.36	5.27	5.19
5600	6.49	6.36	6.23	6.11	6.00	5.89	5.78	5.67	5.57	5.48	5.38	5.29	5.21
5620	6.51	6.38	6.25	6.13	6.01	5.90	5.79	5.68	5.58	5.49	5.40	5.31	5.22
5640	6.53	6.40	6.27	6.15	6.03	5.92	5.81	5.70	5.60	5.51	5.41	5.32	5.24
5660	6.55	6.42	6.29	6.17	6.05	5.94	5.83	5.72	5.62	5.53	5.43	5.34	5.26
5680	6.57	6.44	6.31	6.19	6.07	5.96	5.85	5.74	5.64	5.54	5.45	5.36	5.27
5700	6.59	6.46	6.33	6.21	6.09	5.98	5.87	5.76	5.66	5.56	5.47	5.38	5.29
5720	6.61	6.48	6.35	6.23	6.11	5.99	5.88	5.78	5.67	5.57	5.48	5.39	5.30
5740	6.63	6.50	6.37	6.25	6.13	6.01	5.90	5.80	5.69	5.59	5.50	5.41	5.32
5760	6.65	6.52	6.39	6.27	6.15	6.03	5.92	5.82	5.71	5.61	5.52	5.43	5.34
5780	6.67	6.54	6.41	6.29	6.17	6.05	5.94	5.84	5.73	5.63	5.54	5.44	5.35
5800	6.69	6.56	6.43	6.31	6.19	6.07	5.96	5.86	5.75		5.56	5.46	5.37
5820	6.71	6.58	6.45	6.32	6.20	6.08	5.97	5.87	5.76		5.57	5.48	5.39
5840	6.73	6.60	6.47	6.34	6.22	6.10	5.99	5.89	5.78		5.59	5.49	5.40
5860	6.75	6.62	6.49	6.36	6.24	6.12	6.01	5.91	5.80		5.61	5.51	5.42
5880	6.77	6.64	6.51	6.38	6.26	6.14	6.03	5.93	5.82		5.62	5.53	5.44
5900	6.87	6.66	6.53	6.40	6.28	6.16	6.05	5.95	5.84	5.74	5.64	5.55	5.46
5920		6.68	6.55	6.42	6.30	6.18	6.07	5.96	5.85	5.75	5.66	5.56	5.47
5940		6.70	6.57	6.44	6.32	6.20	6.09	5.98	5.87	5.77	5.67	5.58	5.49
5960		6.72	6.59	6.46	6.34	6.22	6.11	6.00	5.89	5.79	5.69	5.60	5.51
5980		6.74	6.61	6.48	6.36	6.24	6.13	6.02	5.91	5.81	5.71	5.62	5.52
6000		6.76	6.63	6.50	6.38	6.26	6.15	6.04	5.93	5.83	5.73	5.62	5.54

XII.—REDUCTION TO SEA-LEVEL. ENGLISH.

Ft.	-80.	-20°	-10.	0.	10.	20.	80.	40.	20.	80°	70*	80°	8 <b>6</b> .
	in.	in.	in.	- <del></del> in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
6000 6020	$\begin{array}{c} 6.89 \\ 6.91 \end{array}$	6.76 6.78	6.63 6.64	$6.50 \\ 6.51$	6.38 6.39	6.26 6.27	6.15 6.16	6.04 6.05	$5.93 \\ 5.94$	5.83 5.84	5.73 5.74	$5.64 \\ 5.65$	5.54 5.55
6040   6060	6.93 6.95	6.80	6.66 6.68	6.53 6.55	6.41	6.29	$\begin{vmatrix} 6.18 \\ 6.20 \end{vmatrix}$	6.07 6.09	5.96 5.98	5.86 5.88	5.76 5.78	5.67 5.69	5.57 5.59
6100	6.97	6.84	6.70	6.57	6.45	6.33	6.22	6.11	6.00	5.89	5.79	5.70	5.60
6120 6140	6.99 7.01 7.03	6.86 6.88 6.90	$egin{array}{c} 6.72 \ 6.74 \ 6.76 \ \end{array}$	6.59 6.61 6.63	6.47 6.48 6.50	$6.35 \\ 6.36 \\ 6.38$	$6.24 \\ 6.25 \\ 6.27$	$egin{array}{c} 6.13 \\ 6.14 \\ 6.16 \\ \hline \end{array}$	6.02 6.03 6.05	5.91 5.92 5.94	$\begin{bmatrix} 5.81 \\ 5.82 \\ 5.84 \end{bmatrix}$	5.72 5.73 5.75	5.62 5.64 5.65
6160 6180	7.05 7.07	6.92 6.94	6.78 6.80	6.65 6.67	$6.52 \\ 6.54$	$6.40 \\ 6.42$	6.29 6.31	6.18	6.07 6.09	5.96 5.98	5.86	5.77 5.78	5.67 5.69
6200	7.09	6.96	6.82	6.69	6.56	6.44	6.33	6.22	6.11	6.00	5.90	5.80	5.71
6220 6240	$7.11 \\ 7.13$	6.97 6.99	6.84 6.86	$6.71 \\ 6.73$	6.58 6.60	6.46 6.48	6.34	$6.23 \\ 6.25$	$6.12 \\ 6.14$	$6.01 \\ 6.03$	$5.91 \\ 5.93$	5.81 5.83	5.72 5.74
6260 6280	7.15 7.17	7.01 7.03	$\begin{bmatrix} 6.88 \\ 6.90 \end{bmatrix}$	6.75 6.77	$6.62 \\ 6.64$	$6.50 \\ 6.52$	6.38	$6.27 \\ 6.28$	$6.16 \\ 6.17$	$6.05 \\ 6.07$	5.95 5.96	5.85 5.86	5.76 5.77
6300 6320	7.19	7.05	6.92	6.79	6.66	6.54	6.42	6.30	6.19	6.09	5.98	5.88	5.79
6340 6360	7.21 7.23 7.25	7.07	6.93	6.80	$\begin{vmatrix} 6.67 \\ 6.69 \\ 6.71 \end{vmatrix}$	6.55 6.57 6.59	6.43 6.45 6.47	6.32 6.33 6.35	6.21	6.10	6.00 6.01 6.03	5.90 5.91 5.93	$\begin{bmatrix} 5.80 \\ 5.82 \\ 5.84 \end{bmatrix}$
6380	7.27	7.11 7.13	6.97 6.99	6.84 6.86	6.73	6.61	6.49	6.37	6.24 6.26	$\begin{vmatrix} 6.14 \\ 6.15 \end{vmatrix}$	6.05	5.95	5.85
6400 6420	$7.29 \\ 7.31$	7.15 7.17	7.01 7.03	6.88 6.89	6.75 6.76	6.63 6.64	$\begin{vmatrix} 6.51 \\ 6.52 \end{vmatrix}$	6.39 6.40	$6.28 \\ 6.29$	6.17 6.19	6.07	5.97 5.98	5.87 5.88
6440 6460	7.33 7.35	$7.19 \\ 7.21$	7.05 7.07	$6.91 \\ 6.93$	6.78 6.80	6.66 6.68	6.54 6.56	$6.42 \\ 6.44$	6.31 6.33	$\frac{6.20}{6.22}$	$6.10 \\ 6.12$	$6.00 \\ 6.02$	5.90 5.92
6480	7.37	7.23	7.09	6.95	6.82	6.70	6.58	6.46	6.35	6.24	6.13	6.03	5.93
6500 6520	7.39	7.25 7.26	$7.11 \\ 7.12$	6.97 6.98	6.84	6.72	6.60	$\begin{bmatrix} 6.48 \\ 6.49 \end{bmatrix}$	6.38	6.26	6.15	6.05	5.95 5.96
6540 6560 6580	7.43	7.28	7.14	7.00	6.89	6.75	6.63	6.53	$6.40 \\ 6.42 \\ 6.42$	6.29	6.18	6.08	5.98 6.00
6600	7.47	7.32 7.34	7.18	7.04	6.91 6.93	6.79	6.66	6.54	6.43 6.45	6.32	6.22 $6.24$	6.11	6.01
6620 6640		7.36 7.38	$7.22 \\ 7.24$	7.08 7.10	6.95 6.97	6.82	6.70	6.58	6.47 6.48	6.36	$\begin{array}{c} 6.21 \\ 6.25 \\ 6.27 \end{array}$	6.15	6.05 6.06
6660 6680	7.55 7.57	7.40 7.42	$7.26 \\ 7.28$	$7.12 \\ 7.14$	6.99 7.01	6.86 6.88	6.73	6.61 6.63	$6.50 \\ 6.52$	6.39	6.29	6.18	6.08 6.10
6700	7.59	7 <b>4</b> 4	7.30	7.16	7.03	6.90	6.77	6.65	6.54	6.43	6.32	6.22	6.12
6720 6740	7.61	7.46	7.31 7.33	7.17	7.04	6.91	$\begin{vmatrix} 6.79 \\ 6.80 \\ \end{vmatrix}$	6.68	6.56 6.57	6.44	6.33	6.23	$\begin{vmatrix} 6.13 \\ 6.15 \end{vmatrix}$
6760 6780	7.65 7.67	$7.50 \\ 7.52$	7.35 7.37	$7.21 \\ 7.23$	7.08 7.10	6.95 6.97	6.82	$\begin{bmatrix} 6.70 \\ 6.72 \end{bmatrix}$	6.59 6.61	6.48 6.49	6.37 6.38	$\begin{bmatrix} 6.27 \\ 6.28 \end{bmatrix}$	6.17 6.18
6800 6820	7.69 7.70	7.54 7.55	7.39 7.40	$7.25 \\ 7.26$	7.12 7.13	6.99	6.86	6.74 6.76	$6.63 \\ 6.64$	$6.51 \\ 6.53$	$\frac{6.40}{6.42}$	6.30 6.31	$6.20 \\ 6.21$
6840 6860	7 72	7.57 7.59	7.42 7.44	7.28 7.30	7.15 7.17	7.02	6.89	6.77 6.79	6.66 6.68		6.43 6.45		
6880	7.76	7.61	7.46	7.32	7.19	7.06	6.93	6.81	6.69	6.58	6.47	6.36	6.26
6900 6920	7.80	7.63 7.65	7.48 7.50	7.34 7.36	$7.21 \\ 7.22$	7.08 7.09	6.95 6.97	6.83 6.85	$\begin{array}{c} 6.71 \\ 6.73 \end{array}$	6.60	6.49 6.50	6.38	6.28 6.29
6940 6960	7.84	7.69	7.52 7.54	7.38	7.24	7.11	6.98 7.00	6.86	6.74 6.76	6.65	6.54	6.41	6.31
6980 7000		7.71 7.73	7.56 7.58	$7.42 \\ 7.44$	7.28 7.30	7.15 7.17	7.02 7.04	$\begin{bmatrix} 6.90 \\ 6.92 \end{bmatrix}$	6.78 6.80	6.66	$\begin{bmatrix} 6.55 \\ 6.57 \end{bmatrix}$	6.44 6.46	8

XII.-REDUCTION TO SEA-LEVEL. ENGLISH.

Pt.	-80.	-50.	-10.	0.	10.	50.	80.	40.	50.	60.	70.	80.	<b>90</b> ·
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
7000	7.88	7.73	7.58	7.44	7.30	7.17	7.04	6.92	6.80	6.68	6.57	6.46	6.36
7020	7.90	7.74	7.59	7.45	7.31	7.18	7.06	6.93	6.81	6.69	6.58	6.48	6.37
7040	7.92	7.76	7.61	7.47	7.33	7.20	7.07	6.95	6.83	6.71	6.60	6.49	6.39
7060	7.94	7.78	7.63	7.49	7.35	7.22	7.09	6.97	6.85	6.73	6.62	6.51	6.41
7080	7.96	7.80	7.65	7.51	7.37	7.24	7.11	6.98	6.86	6.74	6.63	6.53	6.42
7100 7120	7.98 7.99 8.01 8.03	7.82 7.84 7.86 7.88 7.90	7.67 7.69 7.71 7.73 7.75	7.53 7.54 7.56 7.58 7.60	7.39 7.40 7.42 7.44 7.46		7.13 7.14 7.16 7.18 7.19	7.00 7.02 7.03 7.05 7.07	6.88 6.90 6.91 6.93 6.95	6.76 6.78 6.79 6.81 6.83	6.65 6.67 6.68 6.70 6.72	6.55 6.56 6.58 6.60 6.61	6.44 6.45 6.47 6.49 6.50
7200 7220 7240 7260 7280	8.07 8.09 8.11 8.13 8.15	7.92 7.93 7.95 7.97 7.99	7.77 7.78 7.80 7.82 7.84	7.62 7.63 7.65 7.67 7.69	7.48 7.49 7.51 7.53	7.34 7.36 7.37 7.39 7.41	7.21 7.23 7.24 7.26 7.28	7.09 7.10 7.12 7.14 7.15	6.97 6.98 7.00 7.02 7.03	6.85 6.86 6.88 6.90 6.91	6.74 6.75 6.77 6.79 6.80	6.63 6.64 6.66 6.68 6.69	6.52 6.53 6.55 6.57 6.58
7800	8.17	8.01	7.86	7.71	7.57	7.43	7.30	7.17	7.05	6.93	6.82	6.71	6.60
7820	8.18	8.02	7.87	7.72	7.58	7.45	7.32	7.19	7.07	6.95	6.83	6.72	6.61
7840	8.20	8.04	7.89	7.74	7.60	7.46	7.33	7.20	7.08	6.96	6.85	6.74	6.63
7860	8.22	8.06	7.91	7.76	7.62	7.48	7.35	7.22	7.10	6.98	6.87	6.76	6.65
7880	8.24	8.08	7.93	7.78	7.64	7.50	7.37	7.24	7.12	7.00	6.88	6.77	6.66
7400	8.26	8.10	7.95	7.80	7.66	7.52	7.39	7.26	7.14	7.02	6.90	6.79	6.68
7420	8.28	8.12	7.96	7.81	7.67	7.54	7.40	7.27	7.15	7.03	6.91	6.80	6.69
7440	8.30	8.14	7.98	7.83	7.69	7.55	7.42	7.29	7.17	7.05	6.93	6.82	6.71
7460	8.32	8.16	8.00	7.85	7.71	7.57	7.44	7.31	7.19	7.07	6.95	6.84	6.73
7480	8.34	8.18	8.02	7.87	7.73	7.59	7.45	7.32	7.20	7.08	6.96	6.85	6.74
7500	8.36	8.20	8.04	7.89	7.75	7.61	7.47	7.34	7.22	7.10	6.98	6.87	6.76
7520	8.37	8.21	8.05	7.90	7.76	7.62	7.49	7.36	7.23	7.11	6.99	6.88	6.77
7540	8.39	8.23	8.07	7.92	7.78	7.64	7.50	7.37	7.25	7.13	7.01	6.90	6.79
7560	8.41	8.25	8.09	7.94	7.80	7.66	7.52	7.39	7.27	7.15	7.03	6.92	6.81
7580	8.43	8.27	8.11	7.96	7.81	7.67	7.54	7.41	7.28	7.16	7.04	6.93	6.82
7600	8.47	8.29	8.13	7.98	7.83	7.69	7.56	7.43	7.30	7.18	7.06	6.95	6.84
7620		8.30	8.14	7.99	7.85	7.71	7.58	7.44	7.31	7.19	7.07	6.96	6.85
7640		8.32	8.16	8.01	7.86	7.72	7.59	7.46	7.33	7.21	7.09	6.98	6.87
7660		8.34	8.18	8.03	7.88	7.74	7.61	7.48	7.35	7.23	7.11	7.00	6.89
7680		8.36	8.20	8.05	7.90	7.76	7.63	7.49	7.36	7.24	7.12	7.01	6.90
7700	8.55	8.38	8.22	8.07	7.92	7.78	7.65	7.51	7.38	7.26	7.14	7.03	6.92
7720	8.56	8.39	8.23	8.08	7.94	7.80	7.66	7.53	7.40	7.27	7.15	7.04	6.93
7740	8.58	8.41	8.25	8.10	7.95	7.81	7.68	7.54	7.41	7.29	7.17	7.06	6.95
7760	8.60	8.43	8.27	8.12	7.97	7.83	7.70	7.56	7.43	7.31	7.19	7.08	6.96
7780	8.62	8.45	8.29	8.14	7.99	7.85	7.71	7.58	7.45	7.32	7.20	7.09	6.98
7800	8.64	8.47	8.31	8.16	8.01	7.87	7.73	7.60	7.47	7.34	7.22	7.11	6.99
7820	8.65	8.48	8.32	8.17	8.03	7.88	7.74	7.61	7.48	7.35	7.23	7.12	7.00
7840	8.67	8.50	8.34	8.19	8.04	7.90	7.76	7.63	7.50	7.37	7.25	7.14	7.02
7860	8.69	8.52	8.36	8.21	8.06	7.92	7.78	7.65	7.52	7.39	7.27	7.15	7.04
7880	8.71	8.54	8.38	8.23	8.08	7.93	7.79	7.66	7.53	7.40	7.28	7.17	7.05
7900 7920 7940 7960 7980	8.74 8.76 8.78 8.80	8.56 8.57 8.59 8.61 8.63 8.65	8.40 8.41 8.43 8.45 8.47 8.46	8.25 8.26 8.28 8.30 8.32 8.34	8.10 8.12 8.13 8.15 8.17 8.19	7.95 7.97 7.98 8.00 8.02 8.04	7.81 7.83 7.84 7.86 7.88 7.90	7.68 7.70 7.71 7.73 7.75 7.76	7.55 7.57 7.58 7.60 7.62 7.63	7.42 7.44 7.45 7.47 7.49 7.51	7.30 7.31 7.33 7.35 7.36 7.38	7.18 7.19 7.21 7.23 7.24 7.26	7.07 7.08 7.10 7.12 7.13 7.15
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TABLE XIIs.—COLUMN OF AIR EQUAL TO .1 INCH IN THE BAROMETER.
(Enlarged from Guyot.)
Temperature Fahr.

Pressure.	20.	25	30°	35	40*	45	. 50"	55°	60°	65	70°	75	80*	85
Inches.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft	. Ft.	Ft.
22.0	116	118	119	120	122	123	124	126	127	128	130	131	132	134
22.5	113	115	116	117	119	120	121	123	124	125	127			131
23.0 23.5	111	112 110	114 111	115 112	116 114	118 115	119 116	120 117	121 119	$\frac{123}{120}$	124 121			128 125
24.0	106	108	109	110	111	113	114	115	116	117	119			122
24.5	104	106	107	108	109	110	111	113	114	115	116			120
25.0	102	104	105	106	107	108	109	110	112	113	114			117
25.5	100	102	103	104	105	106	107	108	109	111	112			115
26.0 26.5	98 96	100 98	101 99	102 100	103	104 102	105 103	106 104	$\frac{107}{105}$	108 106	110 108			113
27.0	94	96	97	98	99	100	101	102	103	104	106	107	108	109
27.5	92	94	95	96	97	98	99	100	101	102	104	105	106	107
28.0	91	92	93	94	95	96	98	99	100	101	102			105
28.5 29.0	90 88	91 89	92 90	93 91	94	95 93	96 94	97 95	98 96	99 97	100 98			103
29.5	87	88	89	90	91	95	93	95	95	96	98			100
30.0	85	86	87	88	89	90	91	92	93	94	95	96	97	98
30.5	84	85	86	87	88	89	90	91	92	93	94	95	96	97
	-cor	UMN	oF.	AIR			0 1 M II erature			IN 7	THE	BAI	ROME	TEI
Pressure.	-coi	T	1	AIR						1	1	BA1	32°	
Pressure.	- s	3°  -	4	o°	4° m.	s° m.	12°	16°	20 m	. 1	<b>1</b> *	28" m.	32°	36°
mm. 560	- s	. n	4° ,	m.	m. 14.5	8° m. 14.7	12° m. 14.9	16°	20 m	· 2	n.	28° m.	m, 16.0	ж. 16.;
Pressure.	- s	. n 8 14 6 13 4 13	4° .0 1.8 1.6 1.6	m. 4.3. 4.0 3.8	4° m.	s° m.	12°	16°	20 m 2 15.9 15.7 14.	. r 4 18 2 18 9 18	a. 5.6 5.4 5.1	28" m.	32°	m. 16.3 16.0 15.8
mm. 560 570 580 590	m. 13. 13. 13. 13. 12.	. n. 8 14 13 1 13 9 13	4° 1 1 1 1 1 1 1	m. 4.3 4.0 3.8 3.6	m. 14.5 14.2 14.0 13.8 13.5	m. 14.7 14.5 14.2 14.0	m. 14.9 14.7 14.4 14.2	m. 15.: 14.: 14.: 14.:	m 2 15 9 15.7 14.4 14.2 14.	. r 4 18 2 18 9 18 6 14	n. 5.6 5.4 5.1 5.8	m. 15.8 15.6 15.3 15.1	m. 16.0 15.8 15.6 15.3	m. 16.3 16.6 15.8 15.8
mm. 560 570 580 590 600 610	- 8 13. 13. 13. 13. 12. 12.	8 14 13 1 13 9 13 7 12	4°	m. 4.3. 4.0 3.8 3.6 3.3	m. 14.5 14.2 14.0 13.8	m. 14.7 14.5 14.2 14.0	m. 14.9 14.7 14.4 14.2	m. 15.: 14.: 14.: 14.:	m 2 15 9 15.7 7 14.4 14 14.2 2 14.9	. r 4 18 2 18 9 18 6 14 4 14 2 14	a. 5.6 5.4 5.1 4.8	m. 15.8 15.6 15.3	m. 16.0 15.8 15.6 15.3	m. 16.3 16.6 15.8 15.8 15.8
mm. 560 570 580 590 600 610 620 630	m. 13. 13. 13. 13. 12. 12. 12. 12. 12.	8 14 13 1 13 9 13 7 12 5 12 3 12	4° .0 18 16 14 19 17 15 1	m. 4.3. 4.0 3.8 3.6 3.3 3.1 2.9 2.7	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3	m. 15.: 14.: 14.: 14.: 13.: 13.: 13.: 13.: 13.: 13.: 13.: 13	m 2 15 9 15 7 14 14 14 12 14 17 13 5 13	. r 4 18 2 18 9 18 6 14 14 2 14 9 14 7 18	a. 5.6 5.4 5.1 8.8 1.6 1.4 1.1 3.9	m. 15.8 15.6 15.3 15.1 14.8 14.6 14.3	m. 16.0 15.8 15.6 15.3 15.0 14.8 14.6 14.3	m. 16.3 16.6 15.8 15.6 14.8 14.8
mm. 560 570 580 590 600 610 620	- 8 13. 13. 13. 13. 12. 12. 12.	8 14 13 1 13 9 13 7 12 5 12 3 12	4° .0 18 16 14 19 17 15 1	m. 4.3. 4.0 3.8 3.6 3.3 3.1 2.9	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9	m. 14.9 14.4 14.2 14.0 13.7 13.5	m. 15.: 14.: 14.: 18.: 18.: 18.: 18.: 18.: 18.: 18.: 18	m 2 15 9 15 14 14 14 14 2 14 9 14 7 13 5 13 8 13	2 14 16 14 14 14 14 14 14 14 15 15 15 15	a. 5.6 5.4 5.1 1.8 1.6 1.4 1.1 1.3 1.9	m. 15.8 15.6 15.3 15.1 14.8 14.3 14.1 13.9	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1	m. 16.3 16.6 15.8 15.6 14.8 14.8
mm. 560 570 580 610 620 630 640	m. 13. 13. 13. 13. 12. 12. 12. 12. 12. 12. 12. 12. 12. 12	8 14 13 1 13 9 13 12 5 12 1 12 9 12	1	m. 4.3 4.0 3.8 3.6 3.3 3.1 2.9 2.7 2.5	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7	m. 14.9 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9	m. 15.: 14.5. 14.: 14.: 14.: 13.: 13.: 13.: 13.: 13.: 13.: 13.: 13	m 22 15. 9 15. 7 14. 14. 14. 12. 14. 13. 13. 13. 13.	2 14 15 2 15 6 14 14 2 14 15 15 15 15 15 15 15 15 15 15 15 15 15	1.6 5.6 5.4 5.1 1.8 1.6 1.4 1.1 3.9 3.7	m. 15.8 15.6 15.3 15.1 14.8 14.6 14.3 14.1 13.9	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1	m. 16.3.15.6.6.6.15.8.15.14.8.14.3.14.1
mm. 560 570 580 600 610 620 630 640	- s - s - s - s - s - s - s - s - s - s	8 14 13 1 13 9 13 12 5 12 1 12 9 12	4	m. 44.3 44.0 3.8 3.6 3.3 3.1 2.9 2.7 2.5	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5	m. 15.: 14.: 14.: 18.: 18.: 18.: 18.: 18.: 18.: 18.: 18	20 m 2 15 9 15 7 14 14 14 19 14 15 13 13 13 13 15 17 12	2 14 18 14 14 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	4.5.6 6.4 1.1 1.1 1.9 3.7 3.5 3.3	m. 15.8 15.6 15.3 15.1 14.8 14.3 14.1 13.9	m. 16.0 15.8 15.6 15.3 15.0 14.8 14.6 14.3 14.1 13.9 13.7 13.5	m. 16.5.8 15.5.15.6 14.8 14.5.14.8 14.1 18.6
mm. 560 570 580 590 610 620 630 640 650 660 670 680	m, 13, 13, 13, 13, 12, 12, 12, 12, 12, 12, 11, 11, 11, 11	. n 8 144 133 1 133 1 123 1 12	4°	m. 44.3 44.0 3.8 3.6 3.3 3.1 2.9 2.7 1.1.9 1.8	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 11.9	m. 14.7 14.5 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12.5 12.1	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3	m. 15.: 14.: 14.: 13.: 13.: 13.: 13.: 12.: 12.: 12.: 12.: 12.: 12.: 12.: 12	20 m 2 15 15 14 14 14 14 14 15 13 13 13 13 13 17 12 15 12 15 15 12 15 15 15 15 15 15 15 15 15 15 15 15 15	2 14 16 14 14 14 14 14 15 15 18 18 18 18 18 18 18 18 18 18 18 18 18	1.6 6.6 6.4 6.1 6.4 6.1 6.1 6.3 7 8.3 7	m. 15.8 15.6 15.3 15.1 14.8 14.6 14.3 113.9 13.7 13.3	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.3	m. 16.3 15.3 15.3 15.4 14.3 14.3 14.3 13.3 13.3
mm. 560 570 580 590 600 610 620 630 640 650 660 670	- s  m. 13. 13. 13. 12. 12. 12. 12. 11. 11.	. m 88 144 133 11 133 99 133 122 55 122 11 122 99 124 144 111 13 11	4° 4° 4° 4° 4° 4° 4° 4° 4° 4° 4° 4° 4° 4	m. 44.3 44.0 3.8 3.6 3.3 3.3 22.7 22.5 22.1 11.9 11.8 11.6	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1	m. 14.7 14.5 14.2 14.0 13.5 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 12.0	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1	m. 15.: 14.: 14.: 14.: 13.: 13.: 13.: 12.: 12.: 12.: 12.: 12.: 12.: 12.: 12	20 m 22 15. 3 15. 7 14. 4 14. 14. 15. 16. 17. 18. 18. 19. 19. 19. 19. 19. 19. 19. 19	2 15 2 15 2 15 2 15 2 15 2 15 2 15 2 15	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	m. 15.8 15.6 15.3 15.1 14.8 14.1 13.9 13.7 13.3 13.1 12.9	m. 16.0 15.8 15.6 15.3 14.6 14.3 14.1 13.9 13.7 13.5 13.3 13.1	m. 16.5.15.6.15.5.15.6.14.5.14.5.14.5.14.5.
mm. 560 570 580 590 610 620 630 640 650 660 670 680 690	m 13. 13. 13. 13. 12. 12. 12. 12. 12. 12. 12. 11. 11. 11	. n 88 144 64 133 11 12 12 12 12 12 12 12 11 12 11 11 11	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	m. 44.3 44.0 33.8 33.1 22.9 22.7 22.5 11.9 11.8 11.6 11.4	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.5 12.3 12.1 11.9 11.8	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.1 12.9 12.7 12.5 12.3 12.1 12.0 11.8	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 12.0	m. 15.: 14.: 14.: 13.: 13.: 13.: 13.: 12.: 12.: 12.: 12.: 12.: 12.: 12.: 12	mm 22 2 15 5 7 14 4 14 14 14 13 13 13 13 13 13 13 15 15 12 15 15 12 15 15 12 12 12 12 12 12 12 12 12 12 12 12 12	2 2 4 16 2 14 16 2 14 16 2 14 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	m. 15.8 15.6 15.3 15.1 14.8 14.6 14.3 14.1 13.9 13.7 13.3 13.1 12.9	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.3 13.1	m. 16.3 16.6 15.8 15.6 14.8 14.8 14.3 13.5 13.5 13.5 13.5
mm. 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710	- 8 m 13.3 13.1 13.1 13.1 12.1 12.1 12.1 11.1 11	. n 18 144 11 13 12 12 12 12 12 12 12 12 12 12 12 12 12	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	m. 44.3 44.0 3.8 3.6 3.3 3.3 22.7 22.5 22.1 11.9 11.8 11.6	m. 14.5 14.2 14.0 13.8 13.5 13.1 12.9 12.7 12.5 12.3 12.1 11.9 11.8	m. 14.7 14.5 14.2 14.0 13.5 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 12.0	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1	m. 15.: 14.: 14.: 14.: 13.: 13.: 13.: 12.: 12.: 12.: 12.: 12.: 12.: 12.: 12	mm 22 155. 157 144 144 144 144 145 145 145 145 155 133 13 15 15 15 15 15 15 15 15 15 15 15 15 15	. r 4 16 29 18 29 18 66 14 4 14 22 14 99 15 5 13 3 15 15 5 12 5 12 5 12 5 12 15 6 14 14 14 14 14 14 14 14 14 14 14 14 14	n	m. 15.8 15.8 15.8 15.3 15.1 14.8 14.4 13.9 13.7 13.5 13.1 12.9 12.7 12.5	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.3 13.1 12.9 12.7 12.5	m. 16.5.8 15.5.15.6 14.8 14.3 14.3 13.5 13.6 13.5 13.5 13.5 13.5 13.5 13.5 13.5 13.5
mm. 560 570 580 600 610 620 630 640 650 690 700 720 730	-8 13. 13. 13. 13. 12. 12. 12. 12. 12. 12. 12. 12. 11. 11	9 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4°	m. 44.3, 44.0 3.8 3.6 3.8 3.1 22.9 22.7 11.9 1.8 1.4 11.3 11.1 10.9	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 11.9 11.8 11.6 11.4 11.3 11.1	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12 3 12 1 12.0 11.8 11.6 11.5 11.3	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 12.0 11.8 11.6 11.5	m. 15.5 14.5 14.5 13.5 13.5 12.5 12.5 12.5 12.5 12.5 12.5 12.5 12	20 mm 15 15 15 15 15 15 15 15 15 15 15 15 15	2 15 2 15 15 15 15 15 15 15 15 15 15 15 15 15	a. a. a. b. c. d. d. d. d. d. d. d. d. d. d	m. 15.8 15.6 15.3 15.1 14.8 14.1 13.9 13.7 13.5 13.3 13.1 12.9 12.7 12.4 12.2	m. 16.0 15.8 15.6 15.3 15.0 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.3	m. 16.3 16.6 15.8 15.6 14.8 14.8 14.3 13.5 13.5 13.5 13.5
mm. 560 570 580 610 620 630 640 650 660 670 680 690 700 710 720	- 8 m. 13. 13. 13. 13. 13. 12. 12. 12. 12. 12. 12. 12. 12. 12. 12	. n 88 144 64 133 11 12 12 12 13 11 11 11 11 11 11 11 11 11 11 11 11	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	m. 44.3, 44.0 33.8 33.1 22.9 22.7 11.9 11.8 11.8 11.4 11.3 11.1	m. 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12.3 12.1 11.9 11.8 11.6 11.4 11.3	m. 14.7 14.5 14.2 14.0 13.8 13.5 13.3 13.1 12.9 12.7 12.5 12 12 11.6 11.5	m. 14.9 14.7 14.4 14.2 14.0 13.7 13.5 13.3 13.1 12.9 12.7 12.5 12.1 12.0 11.8 11.6	m. 15:: 14:: 14:: 14:: 13:: 13:: 13:: 13:: 12:: 12:: 12:: 12	mm 22 2 15 15 12 12 12 12 12 12 12 12 12 12 12 12 12	2 2 4 16 2 14 16 2 14 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	1.6 6.4 6.4 6.4 6.4 6.4 6.4 6.3 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	m. 15.8 15.8 15.3 15.1 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.1 12.9 12.7 12.5 12.4	m. 16.0 15.8 15.6 15.3 14.8 14.6 14.3 14.1 13.9 13.7 13.5 13.3 13.1 12.9 12.7 12.5	m. 16.3. 15.5. 15.5. 14.8. 14.3. 13.3. 13.4. 13.13. 13.4. 13.13. 13.4. 13.5. 13.4. 13.5. 13.4. 13.5. 13.4. 13.5. 13.4. 13.5. 1

TABLE XIII.—REDUCTION OF BAROMETER READINGS TO SEA-LEVEL METRICAL.

(Original.)

Metres	<b>– 10</b> •	-5.	0°	5°	10°	15.	20.	25.	30.	35.
10 20 80 40	mm. 1.0 2.0 2.9 3.9	mm. 1.0 1.9 2.9 3.8	mm. 1.0 1.9 2.9 3.8	mm. 1.0 1.9 2.9 3.8	mm, 1.0 1.9 2.8 3.7	mm. 1.0 1.9 2.8 3.7	mm. .9 1.8 2.8 3.7	mm. .9 1.8 2.8 3.6	mm. .9 1.8 2.8 3.6	mm. .9 1.8 2.7 3.6
50	4.9	4.8	4.8	4.7	4.6	4.6	4.5	4.5	4.4	4.4
60	5.9	5.8	5.7	5.6	5.6	5.5	5.4	5.3	5.3	5:2
70	6.8	6.7	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.1
80	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0	7.0
90	8.8	8.6	8.5	8.3	8.2	8.1	8.0	7.9	7.8	7.7
100	9.8	9.6	9.4	9.2	9.1	8.9	8.8	8.6	8.5	8.4
110	10.8	10.5	10.3	10.1	9.9	9.8	9.6	9.5	9.3	9.2
120	11.7	11.5	11.2	11.0	10.8	10.7	10.5	10.4	10.2	10.1
130	12.7	12.4	12.2	12.0	11.8	11.6	11.4	11.3	11.1	11.0
140	13.6	13.4	13.1	12.9	12.7	12.5	12.3	12.1	11.9	11.8
150	14.6	14.3	14.1	13.8	13.6	13.4	13.2	13.0	12.8	12.6
160	15.6	15.3	15.0	14.8	14.5	14.2	14.0	13.8	13.6	13.4
170	16.5	16.2	15.9	15.7	15.4	15.1	14.9	14.7	14.5	14.3
180	17.5	17.2	16.9	16.6	16.3	16.0	15.8	15.5	15.3	15.1
190	18.4	18.1	17.8	17.5	17.2	16.9	16.6	16.4	16.1	15.8
200	19.4	19.1	18.7	18.4	18.1	17.8	17.5	17.2	16.9	16.6
210	20.4	20.0	19.7	19.3	19.0	18.7	18.4	18.1	17.8	17.5
220	21.3	21.0	20.6	20.3	19.9	19.6	19.2	18.9	18.6	18.4
230	22.3	21.9	21.5	21.2	20.8	20.4	20.1	19.7	19.4	19.2
240	23.2	22.8	22.4	22.1	21.7	21.3	21.0	20.6	20.3	20.0
250	24.2	23.8	23.4	23.0	22.6	22.2	21.8	21.5	21.1	20.8
260	25.1	24.7	24.3	23.8	23.4	23.0	22.6	22.3	21.9	21.6
270	26.1	25.6	25.2	24.7	24.3	23.9	23.5	23.1	22.7	22.4
280	27.1	26.6	26.1	25.6	25.2	24.8	24.4	24.0	23.6	23.2
290	28.0	27.5	27.0	26.5	26.1	25.7	25.2	24.8	24.4	24.0
800	29.0	28.4	27.9	27.4	27.0	26.5	26.1	25.6	25.2	24.8
810	30.0	29.4	28.8	28.3	27.9	27.4	26.9	26.5	26.1	25.6
820	30.9	30.3	29.7	29.2	28.7	28.3	27.8	27.3	26.9	26.4
880	31.9	31.2	30.6	30.1	29.6	29.1	28.6	28.1	27.7	27.3
840	32.8	32.2	31.6	31.0	30.5	30.0	29.5	29.0	28.5	28.1
850	33.8	33.1	32.5	31.9	31.3	30.8	30.3	29.8	29.3	28.9
860	34.7	34.0	33.4	32.8	32.2	31.7	31.2	30.6	30.1	29.7
870	35.6	34.9	34.3	33.7	33.1	32.6	32.1	31.5	31.0	30.5
880	36.6	35.9	35.2	34.6	34.0	33.4	32.9	32.4	31.8	31.3
890	37.5	36.8	36.1	35.5	34.9	34.3	33.8	33.2	32.6	32.1
400	38.4	37.7	37.0	36.4	35.7	35.1	34.6	34.0	33.4	32.9
410	39.4	38.6	37.9	37.3	36.6	36.0	35.4	34.8	34.2	33.7
420	40.3	39.5	38.8	38.1	37.4	36.8	36.2	35.6	35.0	34.5
480	41.2	40.4	39.7	39.0	38.3	37.7	37.1	36.4	35.8	35.3
440	42.2	41.4	40.6	39.9	39.2	38.5	37.9	37.3	36.7	36.1
450 460 470 480 90	43.1 44.0 45.0 45.9 46.8 47.7	42.3 43.2 44.1 45.0 45.9 46.8	41.5 42.4 43.3 44.2 45.1 46.0	40.8 41.7 42.5 43.4 44.3 45.2	40.1 40.9 41.8 42.6 43.5 44.4	39.4 40.2 41.1 41.9 42.8 43.6	38.8 39.6 40.5 41.3 42.1 42.9	38.2 39.0 39.8 40.6 41.4 42.2	37.5 38.3 39.1 39.9 40.7 41.5	36.9 37.7 38.5 39.3 40.1 40.9

XIII.-REDUCTION TO SEA-LEVEL. METRICAL.

1	Metres.	<b>-10</b> *	-5.	0.	5°	10.	15.	30.	25°	30°	35.
		mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
	<b>4500</b>	47.7	46.8	46.0	45.2	44.4	43.6	42.9	42.2	41.5	40.9
	<b>4510</b>	48.6	47.7	46.9	46.1	45.3	44.5	43.8	43.1	42.4	41.7
	<b>5</b> 20 <b>5</b> 80	49.5 50.4	48.6 49.5	47.8 48.7	47.0 47.8	46.1 47.0	$\begin{array}{c} 45.3 \\ 46.2 \end{array}$	44.6 45.4	43 9 44.7	43.2 44.0	42.5 43.3
	<b>5</b> 40	51.3	50.4	49.5	48.7	47.8	47.0	46.3	45.5	44.8	44.1
	<b>4550</b>	52.3	51.3	50.4	49.6	48.7	47.9	47.1	46.3	45.6	44.8
	€60	53.2	52.2	51.3	50.4	49.5	48.7	47.9	47.2	46.4	45.6
	<b>5</b> 70 <b>5</b> 80	54.1 55.0	53.1 54.0	$\begin{array}{c} 52.2 \\ 53.1 \end{array}$	$\begin{array}{c} 51.3 \\ 52.2 \end{array}$	50.4 51.3	$\begin{array}{c} 49.6 \\ 50.4 \end{array}$	48.8	48.0 48.8	47.2 48.0	46.4
	<b>590</b>	55.9	54.9	53.9	53.0	52.1	51.3	50.4	49.6	48.8	48.0
	€300	56.8	55.8	54.8	53.9	53.0	52.1	51.2	50 4	49.6	48.8
,	<b>€</b> 10	57.7	56.7	55.7	54.8	53.8	52.9	52.1	51.2	50.4	49.6
	<b>€320</b> <b>€380</b>	58.6 59.5	57.6 58.5	$\begin{array}{c} 56.6 \\ 57.5 \end{array}$	55.6 56.5	54.7 55.5	$\begin{array}{c} 53.8 \\ 54.6 \end{array}$	$\begin{array}{c c} 52.9 \\ 53.7 \end{array}$	$\begin{array}{c c} 52.0 \\ 52.8 \end{array}$	$\begin{array}{c} 51.2 \\ 52.0 \end{array}$	50.3 51.1
	<b>3</b> 40	60.4	59.4	58.4	57.4	56.4	55.4	54.5	53.6	52.8	51.9
	€50	61.4	60.3	59.2	58.2	57.2	56.3	55.3	54.4	53.5	52.7
	<b>60</b>	62.3	61.2	60.1	59.1	58.1	57.1	56.1	55.2	54.3	53.4
	<b>❸</b> 70 <b>❸</b> 80	63.2 64.1	$62.1 \\ 62.9$	$\begin{array}{c} 61.0 \\ 61.8 \end{array}$	60.0 60.8	58.9 59.8	$\begin{array}{c} 57.9 \\ 58.8 \end{array}$	56.9 57.8	56.0 56.8	55.1	54.2 55.0
	<b>690</b>	65.0	63.8	62.7	61.7	60.6	59.6	58.6	57.6	56.7	55.8
	700	65.9	64.7	63.6	62.5	61.4	60.4	59.4	58.4	57.5	56.6
	710 720	66.8 67.7	65.6 66.5	$\begin{array}{c} 64.5 \\ 65.3 \end{array}$	$\begin{array}{c} 63.4 \\ 64.2 \end{array}$	62.3	$\substack{61.2 \\ 62.1}$	$\begin{array}{c} 60.2 \\ 61.0 \end{array}$	59.2 60.0	$\begin{array}{c} 58.3 \\ 59.1 \end{array}$	57.4 58.2
	780	68:6	67.4	66.2	65.1	$\begin{array}{c} 63.1 \\ 64.0 \end{array}$	$\begin{array}{c} 62.1 \\ 62.9 \end{array}$	61.8	60.8	59.9	58.9
\	740	69.4	68.2	67.0	65.9	64.8	63.7	62.6	61.6	60.7	59.7
//	750	70.3	69.1	67.9	66.8	65.7	64.6	63.5	62.4	$\begin{array}{c} 61.4 \\ 62.2 \end{array}$	60.5 61.2
11	760 770	$\begin{bmatrix} 71.2 \\ 72.1 \end{bmatrix}$	70.0 70.9	$68.8 \\ 69.7$	67.6 68.5	$\begin{array}{c} 66.5 \\ 67.3 \end{array}$	$\begin{array}{c} 65.4 \\ 66.2 \end{array}$	$\begin{array}{c} 64.3 \\ 65.1 \end{array}$	$\begin{array}{c c} 63.2 \\ 64.0 \end{array}$	63.0	62.0
1	\ 780	73.0	71.7	70.5	69.3	68.2	67.0	65.9	64.8	63.8	62.8
- 1	790	73.9	72.6	71.4	70.2	69.0	67.8	66.7	65.6	64.6	63.6
	800	74.8	73.5	72.2	71.0	69.8	68.6	67.5	66.4	65.4	64.4
1	810 820	75.7 76.5	74.4 75.2	$\begin{array}{c} 73.1 \\ 73.9 \end{array}$	$\begin{array}{c} 71.8 \\ 72.6 \end{array}$	70.6 $71.4$	$\begin{array}{c} 69.4 \\ 70.2 \end{array}$	$68.3 \\ 69.1$	$\begin{array}{c} 67.2 \\ 68.0 \end{array}$	66.2 66.9	$\begin{array}{c c} 65.2 \\ 65.9 \end{array}$
	830	77.4	76.1	74.8	73.5	72.3	71.1	69.9	68.8	67.7	66.7
	840	78.3	77.0	75.7	74.4	73.1	71.9	70.7	69.6	68.5	67.5
- 1	850	79.2	77.8	76.5	75.2	74.0	72.7	71.5	70.3	69.2	68.2
- 1	860 870	80.1 81.0	78.7 79.6	$\begin{array}{c} 77.4 \\ 78.2 \end{array}$	$\begin{array}{c c} 76.1 \\ 76.9 \end{array}$	$\begin{array}{c} 74.8 \\ 75.6 \end{array}$	$\begin{array}{c} 73.5 \\ 74.3 \end{array}$	$\begin{array}{c} 72.3 \\ 73.1 \end{array}$	$\begin{array}{c} 71.1 \\ 71.9 \end{array}$	70.0 70.8	$69.0 \\ 69.7$
- 1	880	81.8	80.4	79.1	77.8	76.4	75.1	73.9	72.7	71.6	70.5
	890	82.7	81.3	80.0	78.6	77.2	75.9	74.7	73.5	72.3	71.2
	900	83.6	82.2	80.8	79.4	78.0	76.7	75.5	74.3	73.1	72.0
1	910 920	84.5 85.4	83.0 83.9	$\begin{array}{c} 81.6 \\ 82.5 \end{array}$	80.2 81.1	$\begin{array}{c} 78.9 \\ 79.7 \end{array}$	77.6 78.4	$\begin{array}{c} 76.3 \\ 77.1 \end{array}$	$\begin{array}{c} 75.1 \\ 75.9 \end{array}$	$\begin{array}{c c} 73.9 \\ 74.7 \end{array}$	$\begin{array}{c c} 72.8 \\ 73.5 \end{array}$
- 1	980	86.2	84.7	83.3	81.9	80.5	79.2	77.9	76.6	75.4	74.3
	940	87.1	85.6	84.1	82.7	81.4	80.0	78.7	77.4	76 2	75.1
	950 960	87.9	86.5	85.0	83.6	82.2	80.8	79.5	78.2	77.0	75.8
- 1	970	88.8 89.7	87.3 88.2	85.8 86.7	$\begin{array}{c c} 84.4 \\ 85.2 \end{array}$	$\begin{array}{c} 83.0 \\ 83.8 \end{array}$	$\begin{bmatrix} 81.6 \\ 82.4 \end{bmatrix}$	$80.2 \\ 81.0$	78.9 79.7	77.7 78.5	76.6 77.4
- 1	980	90.5	89.0	87.5	86.0	84.6	83.2	82.8	80.5	79.3	78
- 1	990	91.4	89.8	88.3	86.8	85.4	84.0	82.6	81.3	80.1	7
- 1	1000	92.3	90.7	89.1	87.6	86.2	84.8	83.4	82.1	80.8	$\overline{\lambda}$

## XIII.-BEDUCTION TO SEA-LEVEL. METRICAL.

Metres	<b>- 10</b> •	-5°	0.	5.	10.	15.	20°	25	80.	25'
1000	mm.	mm.	mm.	mnı.	mm.	mm.	nın.	mm.	mm.	mm.
1000 1010	92.3	90.7	89.1	87.6	86.2	84.8	83.4	82.1	80.8	79 6 80 4
1020	$\begin{array}{c} 93.2 \\ 94.0 \end{array}$	$91.6 \\ 92.4$	90.0	88.5 89.3	87.0 87.8	85.6 86.4	84.2   85.0	82.9   83.7	81.6 82 4	81.1
1030	94.0	93.3	91.7	90.1	88.6	87.2	85.8	84.5	83.1	81 .8 \
1040	95.8	94.1	92.5	91.0	89.5	88.0	86.6	85.2	83.9	82.6
1050	96.6	95.0	93.4	91.8	90.3	88.8	87.4	86.0	84.6	83 3
1060	97.5	95.8	94.2	92.6	91.1	89.6	88.2	86.8	85.4	84 -1 84 - 8
1070 ° 1080	98.3	96.7	95.0	93.4	91.9	90.4	89.0	87.6	86.2	85
1090	$99.2 \\ 100.0$	$\begin{array}{c} 97.5 \\ 98.3 \end{array}$	$\begin{array}{c} 95.9 \\ 96.7 \end{array}$	$\begin{array}{c} 94.2 \\ 95.0 \end{array}$	$\begin{array}{c} 92.6 \\ 93.4 \end{array}$	$\begin{array}{c} 91.1 \\ 91.9 \end{array}$	89.7 90.5	88.3 89.1	86.9 87.7	86 -
1100	100.9	99.2	97.5	95.8	94.2	92.7	91.2	89.8	88.4	87 -
1110	101.7	100.0	98.4	96.7	95.1	93.5	92.0	90.6	89.2	. 87. 🗷
1120	102.6	100.9	99.2	97.5	95.9	94.3	92.8	91.4	89.9	່ 88 ≥
1130	103.4	101.7	100.0	98.3	96.7	95.1	93.6	92.1	90.7	89. 🗲
1140	104.3	102.5	100.8	99.1	97.5	95.9	94.4	92.9	91.4	90.C
1150	105.1	103.4	101.6	99.9	98.3	96.7	95.2	93.7	92.2	90.7
1160	106.0	104.2	102.4	100.7	99.1	97. <b>6</b>	96.0	94.5	93.0	91.5
1170	106.8	105 0	103.3	101.5	99.8	98.2	96.7	95.2	93.7	92.2
1180 1190	107.7 108.5	105.9 106.7	$104.1 \\ 104.9$	102.3 $103.1$	$100.6 \\ 101.4$	$99.0 \\ 99.8$	$\begin{array}{c} 97.5 \\ 98.2 \end{array}$	$\begin{array}{c} 96.0 \\ 96.7 \end{array}$	$\begin{array}{c} 94.5 \\ 95.2 \end{array}$	93.0 93.7
1200	109.4	107.5	105.7	103.9	102.2	100.6	99.0	97.4	95.9	94.4
1210	110.2	108.4	106.5	104.7	103.0	101.4	99.8	98.2	96.7	95.2
1220	111.1	109.2	107.4	105.6	103.9	102.2	100.6	99.0	97.4	
1230	111.9	110.1	108.2	106.4	104.7	103.0	101.4	99.8	98.2	96.6
1240	112.8	110.9	109.0	107.2	105.4	103.7	102.1	100.5	98.9	97.4
1250	113.6	111.7	109.8	108.0	106.2	104.5	102.9	101.3	99.7	98.1
1260	114.4	112.5	110.6	108.8	107.0	105.3	103.6	102.0	100.4	98.8
1270 1280	115.3	113.3	111.4	109.5	107.7	106.0	104.4	102.7	101.1	$\begin{array}{c} 99.6 \\ 100.3 \end{array}$
1290	116.1 117.0	$114.1 \\ 115.0$	$  \begin{array}{c} 112.2 \\ 113.0 \end{array}  $	110.3	$108.5 \\ 109.3$	$\begin{array}{c} 106.8 \\ 107.5 \end{array}$	$105.1 \\ 105.8$	$103.5 \\ 104.2$	$101.9 \\ 102.6$	101.0
1300	117.8	115.8	113.8	111.9	110.1	108.3	106.6	104.9	103.3	101.8
1810	118.6	116.6	114.6	112.7	110.9	109.1	107.4	105.7	104.1	102.5
1320	119.5	117.4	115.4	113.5	111.7	109.9	108.2	106.5	104.9	103.3
1830	120.3	118.2	116.2	114.3	112.5	110.7	109.0	107.3	105.6	104.0
1340 1350	121.1	119.0	117.0	115.1	113.3	111.5	109.8	108.1	106.4 107.1	104.7
1860	$121.9 \\ 122.8$	119.8 120.7	117.8	115.9 116.7	114.0	$112.2 \\ 113.0$	110.5	108.8 109.6	107.1	106.2
1370	123.6	120.7	119.4	117.4	115.5	113.0 $113.7$	112.0	110.3	107.5	106.9
1380	123.0	122.3	120.2	118.2	116.3	114.5	112.7	111.0	109.3	107.6
1390	125.2	123.1	121.0	119.0	117.1	115.3	113.5	111.7	110.0	108.3
1400	126.0	123.9	121.8	119.8	117.9	116.0		112.4	110.7	109.0
1410	126.9	124.7	122.6	120.6	118.7	116.8	115.0	113.2	111.5	109.8
1420 1430	$127.7 \\ 128.5$	$  \begin{array}{c} 125.5 \\ 126.3 \end{array}  $	$123.4 \\ 124.2$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$119.5 \\ 120.2$	$117.6 \\ 118.3$	115.8	114.0 114.7	$112.2 \\ 113.0$	110.5
1440	129.3		125.0	123.0	120.2	119.1	117.3	115.5	113.7	111.9
1450	130.2	128.0	125.8	123.7	121.7	119.8	118.0	116.2	114.4	112.6
1460	131.0	128.8	126.6	124.5	122.5	120.6	118.8	117.0	115.2	113.4
1470 1480	131.8	129.6 $130.3$	127.4	125.3	$123.3 \\ 124.0$	121.4	119.5	117.7 118.4	$115.9 \\ 116.6$	114.1
1490	132.6 133.4		$ \begin{array}{c} 128.1 \\ 128.9 \end{array} $	$  \begin{array}{c} 126.0 \\ 126.8 \end{array}  $	124.0	$122.1 \\ 122.8$	120.2 120.9	119.1	117.3	115.5
1500	134.2		129.7	127.6	125.5	123.5	121.6	119.7	117.9	116.2

XIII.-REDUCTION TO SEA-LEVEL. METRICAL.

	<b>-5</b>	0.	5.	10°	15°	50.	25°	80°	35.
-20				20					
mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	nım.	mm.
134.2 135.0	131.9 132.7	$129.7 \\ 130.5$	$127.6 \\ 128.4$	$125.5 \\ 126.3$	$123.5 \\ 124.3$	$121.6 \\ 122.4$	$119.7 \\ 120.5$	117.9 118.7	$  \begin{array}{c} 116.2 \\ 116.9 \end{array}  $
135.8	133.5	131.3	129.2	127.1	125.1	123.1	121.2	119.4	117.6
136.6 137.4	$134.3 \\ 135.1$	132.1   132.9	$130.0 \\ 130.8$	$127.9 \\ 128.7$	$\begin{array}{c} 125.8 \\ 126.6 \end{array}$	$123.8 \\ 124.6$	$121.9 \\ 122.7$	120.1 120.9	$\begin{array}{c c} 118.3 \\ 119.0 \end{array}$
138.2	136.9	139.7	131.5	129.4	127.4	125.4	123.5	121.6	119.7
139.0	186.7		132.3	130.2	128.1	126.1	124.2	122.3	120.4
139.8 140.6	137.5 138.3	$135.2 \\ 136.0$	$133.0 \\ 133.8$	$130.9 \\ 131.7$	$128.8 \\ 129.6$	$126.8 \\ 127.6$	$124.9 \\ 125.6$	$123.0 \\ 123.7$	$121.1 \\ 121.8$
141.4	139.1	136.8	134.6	132.4	130.3	128.3	126.3	124.4	122.5
142.2	139.8	137.5	135.3	133.1	131.0	129.0	127.0	125.1	123.2
$\begin{vmatrix} 143.0 \\ 143.8 \end{vmatrix}$	$140.6 \\ 141.4$	138.3	$\begin{array}{c} 136.1 \\ 136.8 \end{array}$	$133.9 \\ 134.6$	$\begin{array}{c} 131.8 \\ 132.5 \end{array}$	$129.8 \\ 130.5$	$127.8 \\ 128.5$	$125.8 \\ 126.5$	$oxed{123.9}{124.6}$
144.6	142.2	139.9	137.6	135.4	133.3	131.2	129.2	127.2	125.3
145.4	143.0	140.6	138.3		134.0	132.0	130.0	127.9	126.0
146.2 $147.0$		141.4 142.2	139.1 139.9	$136.9 \\ 137.7$	$\begin{array}{c} 134.8 \\ 135.5 \end{array}$	132.7 $133.4$	130.7 131.4	$128.7 \\ 129.4$	$126.7 \\ 127.4$
147.8	145.3	142.9		138.4	136.2	134.1	132.1	130.1	128.1
148.6	146.1	143.7	141.4	139.2	137.0	134.9	132.8	130.8	128.8
149.4	146.9	144.5	142.2	139.9	137.7	135.6	133.5	131.5	129.5
150.2 151.0	147.7 148.5	145.3 146.1	$142.9 \\ 143.7$	$140.6 \\ 141.4$	138.4 $139.2$	$136.3 \\ 137.1$	$134.2 \\ 135.0$	$132.2 \\ 132.9$	$\begin{bmatrix} 130.2 \\ 130.9 \end{bmatrix}$
151.8	149.3	146.8	144.4	142.1	139.9	137.8	135.7	133.6	131.6
$152.5 \\ 153.3$	150.0	147.6 148.3	$145.2 \\ 145.9$	$142.9 \\ 143.6$	$140.7 \\ 141.4$	$138.5 \\ 139.2$	136.4 137.1	$134.3 \\ 135.0$	$\begin{array}{c c} 132.3 \\ 133.0 \end{array}$
154.1		149.1	146.7	144.4	142.1	139.9	137.8	135.7	133.7
154.9	152.4	149.9	147.5	145.2	142.1	140.7	138.5	136.4	134.4
155.6	153.1		148.2	145.9	143.6	141.4	139.2	137.1	135.1
156.4 $  157.2$	$153.9 \\ 154.6$	$151.4 \\ 152.1$	$149.0 \\ 149.7$	$146.6 \\ 147.3$	$144.3 \\ 145.0$	$142.1 \\ 142.8$	139.9 140.6	137.8 138.5	135.8 136.5
158.0	155.4		150.4	148.0	145.7	143.5	141.3	139.2	137.2
158.8 159.6	156.2 $157.0$	$\begin{array}{c} 153.7 \\ 154.4 \end{array}$	$\begin{array}{c} 151.2 \\ 151.9 \end{array}$	$148.8 \\ 149.5$	$\begin{array}{c} 146.4 \\ 147.2 \end{array}$	$144.2 \\ 144.9$	$\begin{array}{c c} 142.0 \\ 142.7 \end{array}$	139.9 140.6	137.8 138.5
160.3	157.7	155.2	152.7	150.3	147.9	145.6	143.4	141.3	139.2
161.1	1		153.4	15.0	148.6	146.3	144.1	142.0	139.9
161.9 162.7	159.3 $160.0$	$\begin{array}{c} 156.7 \\ 157.4 \end{array}$	$154.2 \\ 154.9$	$\begin{array}{c} 151.8 \\ 152.5 \end{array}$	$149.4 \\ 150.1$	$147.1 \\ 147.8$	$144.8 \\ 145.5$	$142.6 \\ 143.3$	$\begin{array}{c c} 140.5 \\ 141.2 \end{array}$
163.4	160.8	158.2	155.7	153.2	150.8	148.5	146.2	144.0	141.9
$164.2 \\ 165.0$	$161.5 \\ 162.3$	$158.9 \\ 159.7$	$\begin{array}{c} 156.4 \\ 157.1 \end{array}$	$\begin{array}{c} 153.9 \\ 154.6 \end{array}$	$\begin{array}{c} 151.5 \\ 152.2 \end{array}$	149.2   149.9	$146.9 \\ 147.6$	$144.7 \\ 145.4$	$ \begin{array}{c c} 142.6 \\ 143.3 \end{array} $
165.8	163.1	160.4	157.8	155.3	152.9	150.6	148.3	146.1	144.0
166.6	163.8	161.1		156.0	153.6	151.3	149.0	146.8	144.7
167.3 168.1		161.9 162.6	159.3 160.0	$156.8 \\ 157.5$	$154.4 \\ 155.1$	$152.0 \\ 152.7$	149.7 150.4	147.5 148.2	145.3 146.0
168.8		163.4	160.8	158.3	155.8	153.4	151.1	148.9	146.7
169.6 170.4	166.8 167.6	$164.1 \\ 164.9$	$\begin{array}{c} 161.5 \\ 162.3 \end{array}$	$159.0 \\ 159.7$	$\begin{array}{c} 156.5 \\ 157.2 \end{array}$	154.1 154.8	$151.8 \\ 152.5$	149.6 150.3	147.4 148.1
171.1	168.3	165.6	163.0	160.4	157.9	155.5	153.2	151.0	148.8
171.9	$169.1 \\ 169.9$	166.4	$163.8 \\ 164.5$	$\begin{array}{c} 161.2 \\ 161.9 \end{array}$	158.7	156.3	153.9	151.6	149.4
172.7 173.4	170.6	$167.2 \\ 167.9$	165.2	161.9 162.6	$159.4 \\ 160.1$	157.0 157.7	154.6 155.3	152.3 153.0	150.1
	L	l				l	\	\	\

#### TABLE XIV.-GRAVITY CORRECTION.

In Inches and Millimetres.

To reduce readings of the mercurial barometer to standard gravity at sea-level in latitude 45°. Computed for thirty inches.

(SIGNAL OFFICE.)

Lat.			Lat.	Lat.			Lat.	Lat.			Lat
_	in.	mm.	+	_	in.	mm.	+	_	in.	mm.	+
0°	.078	1.98	90°	15°	.067	1.70	75°	80°	.039	.99	60°
1	.078	1.97	89	16	.066	1.67	74	81	.036	.92	. 59
2	.078	1.97	88	17	.064	1.63	78	82	.034	.86	58
8	.077	1.96	87	18	.063	1.59	72	88	.032	.80	57
4	.077	1.95	86	19	.061	1.55	71	34	.029	.74	56
5	.077	1.94	85	20	.060	1.51	70	<b>35</b>	.027	67	55
6	.076	1.93	84	21	.058	1.47	69	86	.024	.60	54
7	.075	1.91	83	22	.056	1.42	68	37	.021	.53	53
8	.075	1.90	82	23	.054	1.37	67	<b>38</b>	.019	.47	52
9	.074	1.88	81	24	.052	1.32	66	<b>39</b>	.016	41	51
10	.073	1.85	80	25	.050	1.27	65	40	.013	.34	50
11	.072	1.83	79	26	.048	1.22	64	41	.011	.28	49
12	.071	1.80	78	27	.046	1.17	63	42	.008	.21	48
13	.070	1.77	77	28	.043	1.11	62	43	.005	.14	47
14	.069	1.74	76	29	.041	1.05	61	44	.003	.07	46
15	.067	1.70	75	30	.039	.99	60	45	.000	.00	45

N. B.—In this table the correction is always minus for latitudes 0° to 45°, and plus from 45° to 90°.

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BLE XV.—BAROMETRIC PRESSURES CORRESPONDING TO THE TEMPERATURE OF BOILING WATER. ENGLISH.

(Regnault and Moritz. See Guyot, p. 444.)

F.	0	1	2	3	4	5	6	7	8	9	F.	Ap'x'e helght
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.		Feet.
	17.05	17.08	17.12	17.16	17.20	17.23	17.27	17.31	17.35	17.39	185	15230
36	17.42	17.46	17.50	17.54	17.58	17.61	17.65	17.69	17.73	17.77	186	14670
37	17.81	17.84	17.88	17.92	17.96	18.00	18.04	18.08	18.12	18.16	187	14110
38	18.20	18.24	18.27	18.31	18.35	18.39	18.43	18.47	18.51	18.55	188	13550
39	18.59	18.63	18.67	18.71	18.75	18.79	18.83	18.87	18.91	18.95	189	12990
▶0	19.00	19.04	19.08	19.12	19.16	19.20	19.24	19.28	19.32	19.36	190	12430
▶1	19.41	19.45	19.49	19.53	19.57	19.61	19.66	19.70	19.74	19.78	191	11870
▶2	19.82	19.87	19.91	19.95	19.99	20.04	20.08	20.12	20.17	20.21	192	11310
▶3	20.25	20.29	20.34	20.38	20.42	20.47	20.51	20.55	20.60	20.64	193	10750
▶4	20.68	20.73	20.77	20.82	20.86	20.90	20.95	20.99	21.04	21.08	194	10190
) 6 ) 7 ) 8 ) 9	$\begin{array}{c} 21.13 \\ 21.58 \\ 22.03 \\ 22.50 \\ 22.97 \end{array}$	$\begin{array}{c} 21.17 \\ 21.62 \\ 22.08 \\ 22.54 \\ 23.02 \end{array}$	21.22 21.67 22.12 22.59 23.07	$\begin{array}{c} 21.26 \\ 21.71 \\ 22.17 \\ 22.64 \\ 23.11 \end{array}$	21.30 21.76 22.22 22.69 23.16	$\begin{array}{c} 21.35 \\ 21.80 \\ 22.26 \\ 22.73 \\ 23.21 \end{array}$	21.39 21.85 22.31 22.78 23.26	21.44 21.89 22.36 22.83 23.31	21.48 21.94 22.40 22.88 23.36	21.53 21.99 22.45 22.92 23.40	195 196 197 198 199	9630 9070 8510 7950 7390
)0	23.45	23.50	23.55	23.60	23.65	23.70	23.75	23.80	23.85	23.89	200	6830
)1	23.94	23.99	24.04	24.09	24.14	24.19	24.24	24.29	24.34	24.39	201	6270
)2	24.44	24.49	24.54	24.59	24.64	24.69	24.74	24.80	24.85	24.90	202	5700
)3	24.95	25.00	25.05	25.10	25.15	25.21	25.26	25.31	25.36	25.41	203	5140
)4	25.46	25.52	25.57	25.62	25.67	25.73	25.78	25.83	25.88	25.94	204	4580
05	25.99	26.04	26.10	26.15	26.20	26.26	26.31	26.36	26.42	26.47	205	4020
06	26.52	26.58	26.63	26.68	26.74	26.79	26.85	26.90	26.96	27.01	206	3460
07	27.07	27.12	27.18	27.23	27.29	27.34	27.40	27.45	27.51	27.56	207	2890
08	27.62	27.67	27.73	27.79	27.84	27.90	27.95	28.01	28.07	28.12	208	2330
09	28.18	28.24	28.29	28.35	28.41	28.46	28.52	28.58	28.64	28.69	209	1760
10	28.75	28.81	28.87	28.92	28.98	29.04	$\begin{bmatrix} 29.10 \\ 29.68 \\ 30.28 \end{bmatrix}$	29.16	29.21	29.27	210	1200
11	29.33	29.39	29.45	29.51	29.57	29.62		29.74	29.80	29.86	211	640
12	29.92	29.98	30.04	30.10	30.16	30.22		30.34	30.40	30.46	212	80

# TABLE XVI.—BAROMETRIC PRESSURES CORRESPONDING TO THE TEMPERATURE OF BOILING WATER. METRICAL. (Regnault and Moritz. See Guyot, p. 442.)

Ľ	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm,	mm,
<b>80</b>	354.6	356.1	357.5	359.0	360.4	361.9	363.3	364.8	366.3	367.8
81	369.3	370.8	372.3	373.8	375.3	376.8	378.3	379.8	381.3	382.9
<b>32</b>	384.4	385.9	387.5	389.0	390.6	392.2	393.7	395.3	396.9	398.5
33	400.1	401.7	403.3	404.9	406.5	408.1	409.7	411.3	413.0	414.6
<b>34</b>	416.3	417.9	419.6	421.2	422.9	424.6	426.2	427.9	429.6	431.3
35	433.0	434.7	436.4	438.1	439.9	441.6	443.3	445.1	446.8	448.6,
36	450.3	452.1	453.8	455.6	457.4	459.2	461.0	462.8	464.6	466.4
37	468.2	470.0	471.8	473.7	475.5	477.3	479.2	481.0	482.9	484.8
38	486.6	488.5	490.4 509.6	$492.3 \\ 511.5$	$494.2 \\ 513.5$	$496.1 \\ 515.5$	498.0 517.4	$499.9 \\ 519.4$	501.8 $521.4$	503.8 $523.4$
39	505.7	507.6			1			1		
90	525.4	527.4	529.4	531.4	533.4	535.5	537.5	539.6	541.6	543.7
91	545.7	547.8	549.9	551.9	554.0	556.1	558.2	560.3	562.4	564.6
<b>∋2</b> <b>∋3</b>	566.7 588.3	568.8	571.0 $592.7$	$573.1 \\ 595.0$	$575.3 \\ 597.2$	577.4 599.4	579.6 601.6	581.8 603.9	584.0 606.1	$586.2 \\ 608.4$
9 <b>3</b>	610.7	612.9	615.2	617.5	619.8	622.1	624.4	626.7	6 <b>29</b> .0	631.4
		1	l .	1			i	i	1 .	1
95	633.7	636.0	638.4	640.7	643.1	645.5	647.9	650.2	652.6	655.0
<b>96</b>	657.4	659.9	662.3	664.7 $689.4$	667.1 691.9	669.6 694.5	672.0	674.5	677.0 702.1	679.4 704.6
97 98	707.2	709.7	712.3	714.9	717.5	720.1	722.7	725.3	727.9	730.5
99	733.2	735.8	738.5	741.2	743.8	746.5	749.2	751.9	754.6	757.3
Öő	760.0	762.7	765.5	768.2	770.9	773.7	776.5	779.2	0.287	. A8F
	1		1.55.6	1			1,,,,,		1.12.14	

TABLE XVII.-VAPOR PRESSURE. ENGLISH.

(Regnault and Broch. Reduction original.)

					1					
F.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
<b>— 40</b>	.0054	.0054	.0054	.0053	.0053	.0053	.0052	.0052	.0052	.005:
<b>- 39</b>	0.0058	.0057	.0057.	.0057	.0056	.0056 .0060	.0056	.0055	.0055	.005
$-38 \\ -37$	.0065	.0065	.0061	.0064	.0064	.0063	.0063	.0063	.0062	.006
- 36	.0069	.0069	.0068	.0068	.0067	.0067	.0067	.0066	.0066	.006
- 35	.0073	.0073	.0072	.0072	.0071	.0071	.0071	.0070	.0070	.0069
$ -34 \\ -33 $	.0077 $.0082$	.0077	.0077	.0076	.0076 .0080	.0075 .0080	.0075 $.0079$	.0074	.0074	.0078
[-35]	.0087	.0086	.0086	.0085	.0085	.0084	.0084	.0083	.0083	.008:
-31	.0092	.0091	.0091	.0090	.0090	.0089	.0089	.0088	.0088	.0087
80	.0097	.0097	.0096	.0095	.0095	.0094	.0094	.0093	.0093	.0092
<b>-29</b>	.0103	.0102	0.0102 0.0107	.0101 $.0107$	.0100 .0106	.0100 .0106	0.0099 $0.0105$	.0099 $.0104$	.0098 $.0104$	0.0098
$ -28 \\ -27 $	.0115	.0114	.0113	.0113	.0112	.0112	.0111	.0110	.0110	.0109
<b>-26</b>	.0121	.0120	.0120	.0119	.0118	.0118	.0117	.0117	.0116	.0115
- 25	.0128	.0127	.0126	.0126	.0125	.0124	.0124	.0123	.0122	.0122
-24	.0135 .0142	.013 <del>4</del> .0141	.0133 $.0141$	.0133 .0140	.0132 $.0139$	.0131 .0138	.0131	.0130 .0137	.0129 $.0136$	.0128 .0135
$\begin{bmatrix} -23 \\ -22 \end{bmatrix}$	.0150	.0149	.0148	.0147	.0147	.0146	.0145	.0144	.0144	.0148
<b>- 21</b>	.0158	.0157	.0156	.0156	.0155	.0154	.0153	.0152	.0151	.0150
_ 20	.0167	.0166	.0165	.0164	.0163	.0162	.0161	.0161	.0160	.0159
- 19	$.0175 \\ .0185$	.0174	.0174	.0173	.0172	.0171	.0170	$.0169 \\ .0178$	.0168	.0167
$\begin{vmatrix} -18 \\ -17 \end{vmatrix}$	.0185	.0184 $.0194$	.0183	$.0182 \\ .0192$	.0181 .0191	.0180 .0190	$.0179 \\ .0189$	.0178	.0177 .0187	.0176 .0186
-16	.0205	.0204	.0203	.0202	.0201	.0200	.0199	.0198	.0197	.0196
<b>-15</b>	.0216	.0215	.0213	.0212	.0211	.0210	.0209	.0208	.0207	.0206
- 14	.0227	.0226	.0225	.0224	.0222	.0221	.0220	.0219	.0218	.0217
$ -18 \\ -12 $	0.0239 0.0251	0.0237 $0.0250$	$0.0236 \\ 0.0248$	$0.0235 \\ 0.0247$	.0234 $.0246$	$0.0233 \\ 0.0245$	$.0231 \mid .0244 \mid$	$.0230 \\ .0243$	$.0229 \\ .0241$	.0228
-11	.0264	.0263	.0261	.0260	.0259 .	.0257	.0256	.0255	.0254	.0252
_10	.0277	.0276	.0275	.0273	.0272	.0270	.0269	.0268	.0267	.0265
<b>- 9</b>	.0291	.0290	.0289	.0287	.0286	.0284	.0283	.0281	.0280	.0279
$\begin{vmatrix} -8 \\ -7 \end{vmatrix}$	.0306 $.0322$	.0305	.0303	$.0302 \\ .0317$	$.0300 \\ .0315$	.0299 $.0314$	$.0297 \\ .0312$	$.0296 \\ .0311$	$.0295 \\ .0309$	.0298
- <b>6</b>	.0337	.0336	.0334	.0333	.0331	.0330	.0328	.0326	.0325	.0328
_ 5	.0354	.0352	.0351	.0349	.0348	.0346	.0344	.0343	.0341	.0339
- 4	.0372	.0370	.0368	.0367	.0365	.0363	.0361	$.0359 \\ .0377$	.0357	.0356
$\begin{bmatrix} - & 3 \\ - & 2 \end{bmatrix}$	.0390 .0409	.0388	0.0386 0.0405	.0384 $.0403$	.0383 .0401	0.0381 0.0399	$.0379 \\ .0397$	.0395	.0373	.0374
- ī	.0429	.0427	.0425	.0423	.0421	.0419	.0417	.0415	.0413	.041
- 0	.0450	.0448	.0446	.0444	.0442	.0440	.0438	.0436	.0433	.043
+ 0	.0450	.0452	.0454	.0456	.0458	.0460	.0462	.0465	.0467	.0469
1 0	.0471 $.0493$	.0473	.0475 .0498	.0478 $.0500$	$.0480 \\ .0503$	$0.0482 \\ 0.0505$	. <b>0</b> 484 . 0507	.0487 $.0510$	$.0489 \\ .0512$	.0491 .0518
3	.0517	.0519	.0522	.0524	.0526	.0529	.0532	.0534	.0536	.0539
4	.0541	.0544	.0546	.0549	.0551	.0554	.0556	.0559	.0561	.0564
5	.0567	.0569	.0572	.0574	.0577	.0580	.0582	$.0585 \\ .0612$	.0587	.0590
6 7	.0593 .0620	.0596 .0623	.0598	.0601 $.0629$	.0604 $.0632$	.0607 .0635	.0609 .0638	.0641	.0615 .0643	.0640
8	.0649	.0652	.0655	.0658	.0661	.0664	.0667	.0670	.0673	.0670
9	.0679	.0682	.0685	.0688	.0691	.0694	.0697	.0700	.0704	.0707
10	.0710	.0713	.0716	.0719	.0723	.0726	.0729	.0732	.0736	.073

XVII.—VAPOR PRESSURE. ENGLISH.

			1							
F.	.0	.1	.2	.8	.4	.5	.6	.7	.s 	.9
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
+ 10	.0710	.0713	.0716	.0719	.0723	.0726	.0729	.0732	.0736	.0739
1 11	.0742	.0746	.0749	.0752	.0756	.0759	.0762	.0766	.0769	.0772
12	.0776	.0779	.0783	.0786	.0789	.0793	.0796	.0800	.0804	.0807
13	.0811	.0814	.0818	.0822	.0825	.0829	.0832	.0836	.0839	.0843
14	.0847	.0851	.0854	.0858	.0862	.0866	.0869	.0873	.0877	.0881
1	1									
15	.0885	.0889	.0893	.0896	.0900	.0904	.0908	.0912	.0916	.0920
16	.0924	.0928	.0932	.0936	.0940	.0944	.0948	.0952	.0956	.0961
17	.0965	.0969	.0973	.0977	.0982	.0986	.0990	.0994	.0998	.1003
18	.1007	.1011	.1016	.1020	.1024	.1029	.1033	.1037	.1042	.1046
19	.1051	.1055	.1060	.1064	.1069	.1074	.1078	.1083	.1087	.1092
		İ			i					
20	.1096	.1101	.1106	.1111	.1115	.1120	.1125	.1130	.1134	.1139
21	.1144	.1149	.1154	.1159	.1164	.1169	.1173	.1178	.1183	.1188
22	.1193	.1198	.1203	.1208	.1213	.1219	.1224	.1229	.1234	.1239
28		.1250	.1255	.1260	.1265	.1271	.1276	.1281	.1287	.1292
24		.1303	.1308	.1314	.1319	.1324	.1330	.1335	.1341	.1347
	1									
25	.1352	.1358	.1363	.1369	.1375	.1381	.1386	.1392	.1398	.1404
26	.1409	.1415	.1421	.1427	.1433	.1439	.1445	.1451	.1457	.1463
27	.1469	.1475	.1481	.1487	.1493	.1499	.1505	.1511	.1517	.1524
28		.1536	.1543	.1549	.1555	.1561	.1568	.1574	.1581	.1587
29	.1593	.1600	.1606	.1613	.1619	.1626	.1633	.1639	.1646	.1652
	1000	1000	10=0	1000	1007	1000	1=00	1505	1,500	,,,,
30		.1666	.1673	.1680	.1687	.1693	.1700	.1707	.1714	.1721
81		1735	.1742	.1749	.1756	.1763	.1770	.1777	.1784	.1791
32		.1806	.1813	.1820	.1828	.1835	.1843	.1850	.1857	.1865
88		.1880	.1887	.1895	.1902	.1910	.1917	.1925	.1933	.1940
84	.1948	.1956	.1964	.1972	.1980	.1987	.1995	.2003	.2011	.2019
05	.2027	0095	0049	0051	9050	9007	0076	9004	0000	0100
		.2035	.2043	.2051	.2059	.2067	.2076	.2084	.2092	.2100
36		.2117	.2125	.2134	.2142	.2150	.2159	.2167	.2176	.2185
<b>37</b>    <b>38</b>		.2202	.2210	.2219	.2228	.2236	.2245	.2254	.2263	.2272
88 89		.2289	.2298	.2307	.2316	.2325	.2334	.2343	.2353	.2362
<sup>58</sup>	.2371	.2380	.2389	.2399	.2408	.2417	. 2427	.2436	.2446	.2455
40	.2465	.2474	.2484	.2493	.2503	.2513	.2522	.2532	.2542	.2552
41		.2572	.2582	.2591	.2601	.2611	.2622	.2632	.2642	.2652
42		.2672	.2683	.2693	.2703	.2011	.2022	.2032	.2745	.2052
48		.2776	.2787	.2798	.2808	.2713	.2830	.2841	.2852	.2862
44		.2884	.2895	.2906	.2917	.2928	.2939	.2950	.2852	2973
**	1.2010	1.2004	.2000	.2000	.2017	.2020	.2000	.2000	.2002	.4813
45	.2984	.2996	.3007	.3018	.3030	.3041	.3053	.3064	.3076	.3087
46		.3111	.3122	.3134	.3146	.3158	.3170	.3182	.3194	.3206
47		.3230	.3242	.3254	.3267	.3279	.3291	.3303	.3316	.3328
48		.3353	.3365	.3378	.3391	.3404	.3416	.3429	.3442	3455
48		.3480	.3493	.3506	.3519	.3532	.3545	.3559	.3572	.3585
II - "				1 .5555						
50	.3598	.3612	.3625	.3639	.3652	.3665	.3679	.3693	.3706	3720
51		.3748	.3762	.3775	.3789	.3803	.3817	.3831	.3845	.3860
52	.3874	.3888	.3902	.3917	.3931	.3945	.3960	.3974	.3989	.4004
58		.4033	.4048	.4063	.4077	.4092	.4107	.4122	.4137	.4152
54		.4183	.4198	.4213	.4228	.4244	.4260	.4275	.4290	.4306
•	İ				1	•	}	]	Ì	
55	.4322	.4337	.4353	.4369	.4385	.4401	.4417	.4433	.4449	.4465
56	.4481	.4497	.4513	.4530	.4546	.4562	.4579	.4595	.4612	.4628
57	.4645	.4662	.4678	.4695	.4712	.4729	.4746	.4763	.4780	.4798
58	.4815	.4832	.4849	.4867	.4884	.4902	.4919	.4937	.4954	4972
59	4990	.5008	.5026	.5044	.5061	.5079	.5097	.5115	.5134	
60	.5170	.5189	.5207	.5226	.5244	.5263	.5282	.5300	.5319	
	1					-	1			

XVII. VAPOR PRESSURE. ENGLISH.

) 1									-	
F.	.0	1	.2	.8	.4	.5	.6	.7	.8	.90
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
+60	.5170	.5189	. 5207	. 5226	.5244	.5263	.5282	.5300	.5319	. 5338
61	.5357	.5376	.5395	.5414	.5433	.5452	.5471	.5491	.5510	. 5530
62	.5549	. 5568	.5588	.5608	.5627	.5647	.5667	.5687	.5707	.5727
68	.5747	.5768	.5788	.5808	.5828	. 5849	. 5869	.5890	.5911	. 5931
64	.5952	.5973	.5994	.6015	.6036	.6057	.6078	.6099	.6120	.6141
65	.6163	.6184	.6206	.6227	. 6249	.6271	.6293	. 6315	.6337	.6358
66	.6380	.6403	. 6425	.6447	.6469	.6492	.6514	.6536	.6559	.6582
67	.6605	.6628	.6651	.6674	.6697	.6720	.6743	.6766	.6789	.6813
68	.6836	.6860	.6883	.6907	.6930	.6954	.6978	.7002	.7026 .7270	7050
69	.7074	.7098	.7123	.7147	.7172	.7196	.7221	.7245	.7270	.7295
70	.7320	.7345	.7370	.7395	.7420	.7445	.7471	.7496	.7522 .7781	.7547
71	.7573	.7599	.7625 .7887	$\begin{array}{ c c c } .7650 \\ .7913 \end{array}$	.7676 .7940	.7702	.7728 .7994	.7754 .8021	.8048	.7807 .8075
72	.7834 .8102	.7860 .8130	.8157	.8184	.8212	.7967	.8267	.8295	.8323	.8351
78	.8379	.8407	.8435	.8463	.8492	.8240 .8520	.8548	.8577	.8606	.8635
74			•	·						
75	.8664	.8693	.8722	.8751	.8780	.8809	.8839	.8868	.8897	.8927
76	.8957	.8987	.9017	.9047	.9077	.9107	.9137	.9167	.9198	.9228
77	.9259	.9290	.9321	.9351	.9382	.9414	.9445	.9476	.9507	.9538
78	.9570	.9602	.9633	.9665	.9697	.9729	.9761	.9793	.9825	.9857
79	.9890	.9923	.9955	.9988	1.0021	1.0053	1.0086	1.0119	1.0152	1.0186
80	1.0220	1.0253	1.0287	1.0320	1.0354	1.0388	1.0422	1.0456	1.0490	1.0524
81	1.0558	1.0593		1.0662	1.0697	1.0732		1.0802	1.0837	1.0872
82	1.0907	1.0943	1.0978	1.1014	1.1050	1.1086		1.1158		1.1230
88	1.1266			1.1376	1.1412	1.1449	1.1486	1.1523		1.1598
84	1.1635	1.1673	1.1710	1.1748	1.1786	1.1824	1.1862	1.1900	1.1938	1.1977
85	1.2015	1.2053	1.2092	1.2131	1.2170	1.2209	1.2248	1.2288	1.2327	1.2366
86	1.2406				1.2565	1.2605		1.2686		1.2766
87	1.2807	1.2848				1.3012		1.3095		1.3178
88	1.3220				1.3389	1.3431	1.3473	1.3516		1.3602
89	1.3645			1.3775	1.3818	1.3862		1.3949		1.4037
90	1.4081	1.4126	1.4170	1.4214	1.4259	1.4304	1.4349	1.4394	1.4439	1.4484
91	1.4530			1.4667	1.4713	1.4759				1.4944
92	1.4991		1.5085	1.5131	1.5178	1.5226	1.5273	1.5321	1.5368	1.5416
93	1.5464	1.5512		1.5609	1.5657	1.5706	1.5755	1.5803	1.5852	1.5902
94	1.5951	1.6000	1.6050	1.6100	1.6149	1.6199	1.6249	1.6300	1.6350	1.6400
95	1.6451	1.6502	1.6552	1.6603	1.6655	1.6706	1.6757		1.6860	1.6912
96	1.6964	1.7016	1.7069	1.7121	1.7174	1.7226	1.7279		1.7385	1.7438
97	1.7492		1.7599	1.7653	1.7707	1.7761			1.7924	1.7979
98	1.8034		1.8144	1.8199		1.8310				1.8534
99	1.8590	1.8646	1.8703	1.8760	1.8817	1.8874	1.8931	1.8988	1.9046	1.9103
100	1.9161					1.9452		1.9570		1.9688
101	1.9747				1.9986	2.0046				2.0288
102	2.0349		2.0471			2.0656			2.0842	
103	2.0967					2.1282			2.1473	2.1537
104	2.1601	2.1665	2.1730	2.1794	2.1859	2.1924	2.1989	2.2054	2.2120	2.2186
105	2.2251					2.2583				2.2851
106	2.2919					2.3259		2.3396		2.3534
107	2.3603		2.3742			2.3952				2.4235
108	2.4306	2.4377	2.4448			2.4664				2.4953
109	2.5026					2.5393		2.5541		
110	2.5765	2.5840	2.5915	2.5990	2.6066	2.6141	2.6217	<b>2.629</b> 3 (	2.6369	$\langle 2.6446 \rangle$
	<u> </u>	,	ı	1	I		1	١	,	١

XVII.-VAPOR PRESSURE. ENGLISH.

F.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
0	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
110	2.5765	2.5840	2.5915	2.5990	2.6066	2.6141	2.6217	2.6293	2.6369	2.644
111	2,6522	2.6599	2.6676	2.6753	2.6831	2.6908	2.6986	2.7064	2.7142	2.722
112	2.7299	2.7378	2.7457	2.7536	2.7615	2.7695	2.7775	2.7855	2.7935	2.801
113	2.8095	2.8176	2.8257	2.8338	2.8420	2.8501	2.8583	2.8665	2.8747	2.882
114	2.8912	2.8995	2.9078	2.9161	2.9244	2.9328	2.9412	2.9496	2.9580	2.966
115	2.9749			3.0004	3.0089		3.0261	3.0347	3.0433	3.052
116	3.0606		3.0780		3.0955		3.1131	3.1219		3.139
117	3.1485	3.1574	3.1663	3.1753	3.1842	3.1932	3.2023	3.2113	3.2203	3.229
118	3.2386		3.2568	3.2660	3.2752		3.2936	3.3029	3.3122	3.321
119	3.3308	3.3402	3.3495	3.3589	3.3683	3.3778	3.3872	3.3967	3,4062	3.415
120	3.4253			3.4541	3.4638		3.4831		3.5026	
121	3.5221	3.5319		3.5516	3.5615		3.5813		3.6012	3.611
122	3.6213	3.6313			3.6616		3.6819		3.7023	3.712
123	3.7228		3.7434		3.7641		3.7849			3.816
124	3.8267	3.8372	3.8478	3.8584	3.8690	3.8796	3.8903	3.9010	3.9117	3.922
125		3.9440					3.9983			4.031
126	4.0422			4.0754	4.0865		4.1088			
127	4.1537	4.1650			4.1991		4.2219	4.2334	4.2449	
128		4.2795		4.3027	4.3143		4.3377	4.3494		
129	4.3848	4.3966	4.4085	4.4204	4.4323	4.4442	4.4561	4.4680	4.4800	4.492
130		4,5165					4.5774		4.6020	
131	4,6267		4.6515		4.6765		4.7015			
132	4.7519		4.7773	4.7900	4.8028		4.8284	4.8412	4.8541	4.867
133	5.0110	4.8930	5.0376	4.9190 5.0509			4.9582	4.9714		4.997
134	9.0110	0.0240	5.0570	5.0509	5.0642	5.0776	5.0910	5.1045	5.1180	5.131
135	5.1450			5.1857	5.1994		5.2268		5.2544	5.268
136	5.2820			5.3237	5.3377		5.3657	5.3798	5.3939	5.408
137	5.4222			5.4648	5.4791		5.5078	5.5222	5.5366	5.551
138	5.5654			5.6091	5.6237		5.6530	5.6677	5.6824	5.697
139	5.7120			5.7566			5.8014	5.8164	5.8315	5.846
140	5.8617	5.8769	5.8921	5.9073	5.9226	5.9379	5.9532	5.9686	5.9840	5.999

TABLE XVIII.—VAPOR PRESSURE. METRICAL. (Regnault and Broch, Trav. bur. int. poids et mes, Paris, 1881, i. p. A. 22.)

	(166	gnaut a	ia Broch,	Trav. Du	r. int. pola	s et mes, P	aris, 1881,	1. p. A. 2	2.)	
C.	0	.1	.2	.8	.4	.5	.6	.7	.8	.9
•	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
-30 -29 -28	.380 .419 .460	.377 .415 .456	.373 .411	.370 .407	.366 .403 .443	.363 .399 .439	.360 .395+	.356 .391	.353 .388 .426	.349 .384 .422
- 27 - 26	.505— .553	.500 .548	.451 .495+ .543	.447 .491 .538	.486 .533	.482 .528	.435— .477 .524	.430 .473 .519	.468 .514	.464
- 25 - 24	.606 .664	.601 .658	.595+ .652	.590 .646	.585— .640	.579 .634	.574 .629	.569 .623	.564 .617	.559 .612
-23 -22 -21	.726 .793 .866	.719 .786 .858	.713 .779 .851	.707 .772 .843	.700 .765+ .836	.694 .759 .829	.688 .752 .821	.682 .745+ .814	.676 .739 .807	.670 .732 .800
- 20 - 19	.944 1.029	.936 1.020	.928 1.011	.920 1.003	.912 .994	.904 .986	.896 .977	.888 .969	.881 .960	.873 .952
- 18 - 17 - 16	1.120 1.219 1.325	1.111 1.209 1.314	1.101 1.198 1.303	1.092 1.188 1.292	1.083 1.179 1.281	1.074 1.169 1.271	1.065— 1.159 1.260	1.055+ 1.149 1.250—	1.046 1.139 1.239	1.038 1.130 1.229
- 15 - 14	1.439 1.562	1.427 1.549	1.415 1.537	1.404 1.524	1.392 1.512	1.381 1.499	1.369 1.487	1.358 1.475+	1.347 1.463	1.336 1.451
- 18 - 12 - 11	1.694 1.836 1.988	1.680 1.821 1.972	1.667 1.806 1.957	1.653 1.792 1.941	1.640 1.778 1.926	1.627 1.763 1.910	1.613 1.749 1.895+	1.600 1.735+ 1.880	1.587 1.721 1.865+	1.574 1.708 1.850
- 10 - 9	2.151 2.327	2.135— 2.308	2.118 2.290	2.101 2.273	2.085— 2.255+	2.068 2.237	2.052 2.220	2.036 2.203	2.020 2.185+	2.004 2.168
- 8 - 7 - 6	2.514 2.715+ 2.930	2.495+ 2.695— 2.908	2.476 2.674 2.886	2.457 2.653 2.864	2.438 2.633 2.843	2.419 2.613 2.821	2.400 2.593 2.800	2.382 2.573 2.778	2.363 2.553 2.757	2.345- 2.534 2.736
_ 5	3.160	3.137 3.381	3.113	3.090	3.066	3.043	3.020	2.998	2.975+	2.953 3.184
- 4 - 8 - 2 - 1	3.407 3.669 3.950—	3.642 3.921	3.356 3.615+ 3.892	3.331 3.589 3.864	3.306 3.562 3.836	3.282 3.536 3.807	3.257 3.510 3.779	3.233 3.484 3.752	3.208 3.458 3.724	3.432 3.697
- 0	4.249 4.569	4.218 4.536	4.188 4.503	4.157 4.471	4.127 4.439	4.097 4.407	4.067 4.375—	4.038 4.343	4.008 4.312	3.979 4.280
0 1 2 3	4.569 4.909 5.272	4.602 4.944 5.309	4.635+ 4.980 5.347	4.668 5.016 5.385+	4.702 5.052 5.424	4.736 5.088 5.462	4.770 5.124 5.501	4.805 5.161 5.540	4.839 5.198 5.579	4.874 5.235 5.619
34	5.658 6.069	5.698 6.112	5.738 6.155—	5.779 6.198	5.820 6.241	5.861 6.285—	5.902 6.329	5.943 6.373	5.985+ 6.417	6.027 6.462
5 6 7	6.507 6.972 7.466	6.552 7.020 7.517	6.597 7.068 7.568	6.643 7.117 7.620	6.689 7.166 7.672	6.736 7.215+ 7.725—	6.782 7.265— 7.777	6.829 7.315 7.830	6.876 7.365— 7.883	6.924 7.415+ 7.937
8	7.991	8.045 + 8.606	8.100 8.664	8.155— 8.722	8.210 8.781	8.265 8.840	8.321 8.899	8.378 8.959	8.434 9.019	8.491 9.079
10 11	9.767	9.201 9.832	9.262 9.897	9.324 9.962	9.386 10.028	9.449 10.095	9.512	9.575+ 10.228	9.639 10.296	9.703 10.364 11.065—
12 13 14	11.137	10.501 11.210 11.960	10.570 11.283 12.038	10.639 11.356 12.116	10.709 11.430 12.194	10.780 11.505— 12.273	10.850+ 11.580 12.352	10.921 11.655+ 12.432	10.993 11.731 12.512	11.807 12.593
15 16	13.510	12.755 13.596	12.837 13.683	12.920 13.770	13.003 13.858	13.086 13.946	13.170 14.035+	13.254 14.124	13.339 14.214	13.424 14.304
13   18   19	15.330	14.486 15.427 16.421	14.578 15.524 16.523	14.670 15.621 16.626	14.763 15.719 16.730	14.856 15.818 16.834	14.950+ 15.917 16.939	15.044 16.017 17.044	15.139 16.117 17.150—	15.234 16.218 17.256
26 21 25	17.363 18.466	17.471 18.580	17.579 18.694	17.688 18.809	17.797 18.924	17.907 19.040	18.018 19.157	18.129 19.274	18.241 19.392	18.353 19.511
2: 2: 2:	8 20.858	19.750 20.984 22.286	19.870 21.111 22.420	19.991 21.239 22.555	20.113 21.367 22.690	20.236 21.496 22.826	20.359 21.626 22.963	20.483 21.757 23.101	20.607 21.888 23.239	20.732 22.020 23.378
2	23.518	23.658 25.104	23.799 25.253	23.941 25.402	24.084 25.552	24.227 25.703	24.371 25.855+	24.516 26.008	24.662 26.161	24.809 26.315
2 2 2	7 26.470 8 28.065+	26.626	26.783 28.394 30.091	26.941 28.560 30.265	27.099 28.727 30.440	27.258 28.894 30.616	27.418 29.062 30.793	27.579 29.231 30.971	27.740 29.401 31.149	27.902 29.572 31.329
33	31.510	31.691 33.557	31.873 33.749	32.057 33.942	32.241 34.136	32.426 34.330	32.612 34.526	32.799 34.723	32.987 34.921	33.176 35.119
9,	35.318 37.369	35.519 37.580 39.744	35.721 37.791 39.966	35.923 38.004 40.190	36.126 38.218 40.414	36.331 38.433	36.536 38.649	36.743 38.866 41.094	36.951 39.084 41.323	37.159 39.303 41.553
	39.523 41.784	42.016	42.250	42.484	42.720	40.640 42.957	40.866 43.195—	43.434	43.674	43.915

XVIII.-VAPOR PRESSURE, METRICAL.

0	.1	.2	.8	.4	.5	.6	.7	.8	.9
mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
41.784	42.016	42.250—	42.484	42.720	42.957	43.195—	43.434	43.674	43.915+
44.158	44.401	44.646	44.892	45.139	45.388	45.637	45.888	46.140	46.393
46.648	46.903	47.160	47.418	47.677	47.938	48 200	48.463	48.727	48:992
49.259	49.527	49.796	50.067	50.339	50.612	50.886	51.162	51.439	51.717
51.996	52.277	52.559	52.843	53.128	53.414	53.702	53.991	54.281	54.572
54.865+	55.159	55.455	55.752	56.050	56.350+	56.651	56.954	57.258	57.563
57.870	58.178	58.488	58.799	59.111	59.425+	59.741	60.058	60.376	60.696
61.017	61.339	61.663	61.989	62.316	62.645	62.975+	63.307	63.640	63.974
64.310	64.648	64.987	65.328	65.670	66.014	66.359	66.706	67.055—	67.405
67.757	68.110	68.465	68.822	69.180	69.539	69.901	70.264	70.628	70.994
71.362	-71.731	72.102	72.475+	72.850	73.226	73.603	73.983	74.364	74.747
75.131	75.518	75.906	76.295+	76.687	77.080	77.475—	77.871	78.270	78.670
79.071 83.188 87.488	79.475— 83.610	79.880 84.034 88.371	80.287 84.459	80.696 84.886	81.107 85.315+	81.520 85.746	81.934 86.179	82.350+ 86.614	82.768 87.050—
91.978	92.438	92.900	93.363	89.261 93.829	89.709 94.297	90.159 94.766	90.611	91.064 95.711	91.520 96.187
96.664	97.144	97.626	98.109	98.595+	99.083	99.573	100.065+	100.559	101.056
101.554	102.055—	102.557	103.062	103.569	104.078	104.589	105.102	105.618	106.135+
106.655	107.176	107.700	108.227	108.755+	109.286	109.819	110.354	110.892	111.431
111.973	112.517	113.063	113.612	114.163	114.716	115.272	115.829	116.389	116.952
117.516	118.083	118.652	119.224	119.798	120.375	120.953	128.535	122.118	122.704
123.292	123.883	124.476	125.072	125.670	126.270	126.873	127.479	128.087	128.697
129.309	129.925—	130.542	131.163	131.786	132.411	133.039	133.669	134.302	134.937
135.575	136.215+	136.859	137.504	138.153	138.803	139.457	140.113	140.772	141.433
142.097	142.764	143.433	144.105+		145.458	146.138	146 .820	147.506	148.194
148.885	149.578	150.275	150.974		152.380	153.088	153 .798	154.511	155.227

#### TABLE XIX.-DECREASE OF VAPOR PRESSURE.

With Altitude.

Hann and Hazen. See Zeitschr. met. Wien, 1874, ix; p. 195.

Quotient  $\frac{p}{po}$  for each thousand feet.

ight.	Mts.	1	Balloons	•	Height.	Mts.	Balloons.		
		Hann.	Hazen.				Hann.	Hazen.	
1000 3 1 1	85 81 80 66 61	88 80 66 61	97 86 87 84 81	93 80 73 73 53	11000 12 13 14 15	35 35 30 26 22	27 23 22 21 19	47 45 30 19 15	
} ; }	58 55 47 41 36	54 41 · 37 34 31	79 76 65 51 <del>4</del> 9	13 12  	16 17 18 19 20	19 18 17 16 16	17 16 16 13	12  	

In this table the column headed mts. presents the mean of a very large number of observans collated by Dr. Hann, and the same is true of the column headed balloons, Hann. These re from unventilated psychrometers.

The second and third columns under "balloons" are the results with a sling psychrometelloon voyages on June 17, 1887, at St. Louis, and on August 13, at Philadelphia. The results latter cases were very satisfactory, agreeing at the same height in the ascent and descent

## TABLES XX AND XXI.

WEIGHT OF VAPOR.

#### Introduction.

It is often necessary to determine the weight of vapor in air having various percentages of humidity. The simplest method is based on the principle that the quantity of vapor is constant at any given dew-point, whatever may be the relative humidity of the air. Hence, the dew-point being given, we may immediately obtain the weight of vapor by these tables. The dew-point, if not given, may be found from the wet and dry bulb temperatures by Table XXII or XXIII.

#### EXAMPLE.

Let the air temperature be  $55^{\circ}$ , and the wet bulb temperature 44°.

From Table XXII, we find the dew-point 30°, and from Table XX, with dew-point 30°, the weight of vapor is 1.969 gr.

LE XX,—WEIGHT OF VAPOR IN A CUBIC FOOT OF SATURATED AIR.
Temperature F. Grains Troy. (Guyot, p. 131.)

$$W = .622 \frac{566.5654}{1 + .002036 (t - 32^{\circ})} \times \frac{F}{30}$$

wt.	d. p.	wt.	d. p.	wt.	d. p.	wt.	d. p.	wt.
.545 .569 .595	20 21 22	1.298 1.355 1.415	40 41 42	2.862 2.967 3.076	60 61 62	5.756 5.952 6.154	80 81 82	10.949 11.291 11.643
.621 .649	28 24	1.476 1.540	43 44	3.189 3.306	63 64	6.361 6.575	88 84	12.005 12.376
.678 .708 .739 .772 .806	25 26 27 28 29	1.606 1.674 1.745 1.817 1.892	45 46 47 48 49	3.426 3.550 3.679 3.811 3.948	65 66 67 68 69	6.795 7.021 7.253 7.493 7.739	85 86 87 88 89	12.756 13.146 13.546 13.957 14.378
.841 .878 .916	80 81 82 88	1.969 2.046 2.126 2.208	50 51 52 58	4.089 4.234 4.383 4.537	70 71 72 78	7.992 8.252 8.521 8.797	90 91 92 98	14.810 15.254 15.709 16.176
1.043 1.090 1.138	34 85 86 87	2.292 2.379 2.469	54 55 56 57	4.696 4.860 5.028 5.202	74 75 76 77	9.081 9.372 9.670 9.977	94 95 96 97	16.654 17.145 17.648
1.138 1.190 1.243 1.298	38 39 40	2.563 2.659 2.759 2.862	58 59 60	5.202 5.381 5.566 5.756	78 79 80	10.292 10.616 10.949	98 99 100	18.164 18.693 19.235 19.790

## LE XXI.—WEIGHT OF VAPOR IN A CUBIC METRE OF SATURATED AIR. Temperature C. Grams.

(Guyot, page 75.)

$$W = .622 \frac{1.293223}{1 + .00367t} \times \frac{F}{760}$$

==				1			
	wt.	d. p.	wt.	d. p.	wt.	d. p.	wt.
	1.040	۰	0.070		0.055	۰	00.001
1	1.130	-5 -4	$\frac{3.376}{3.638}$	10 11	$9.357 \\ 9.962$	25 26	$22.831 \\ 24.144$
ś	1.224	<b>— 3</b>	3.919	12	10.601	27	25.524
7	1.325	$     \begin{array}{r}       -3 \\       -2 \\       -1     \end{array} $	4.217	18	11.276	28	26.971
3	1.434	-1	4.534	14	11.988	29	28.489
5	1.551	0	4.869	15	12.739	30	30.079
F.	1.678	0 1 2 8 4	5.209	16	13.532	· <b>31</b>	31.744
3	1.813	2	5.571	17	14.367	<b>32</b>	33.491
3	1.957	8	5.953	18	15.247	33	35.317
ı	2.114	4.	6.360	19	16.173	34	37.230
)	2,283	5	6.791	20	17.148	85	39.231
•	2.475	6	7.247	21	18.174	86	41.323
3	2.678	5 6 7 8 9	7.731	22	19.253	87	43.510
7	2.896	8	8.243	23	20.387	<b>38</b>	45.795
3	3.128	19	8.785	24	22.579	89	48.182
•	3.376	10	9.357	25	22.831	40	50.674

### TABLES XXII AND XXIII.

#### **DEW-POINT AND RELATIVE HUMIDITY.**

#### Introduction.

For nearly one hundred years, a convenient method of determining the moisture contents of the air from readings of the wet and dry bulb thermometers has been sought. The main difficulty in all discussions has been the lack of ventilation of the wet bulb. The simplest form of expression is that of Regnault<sup>1</sup> as follows:

x = f - a (t - t') p, in which,

x = the vapor pressure at the dew-point;

f =the vapor pressure at the wet bulb temperature;

t =the observed (C.) temperature of the air;

t' = the observed (C.) temperature of the wet bulb;

p =the pressure of the air;

a = a constant to be determined by experiment.

The value of a, as determined by different experimenters, has ranged from .00084 to .00067. The larger value from unventilated readings, and the smaller by means of the sling psychrometer.

A long series of experiments by the author<sup>2</sup> has shown that the latter value is satisfactory. Assuming

$$p = 29.4$$
 and,  $a = .000673$ ,

the formula becomes

$$x = f - .011 (t - t')$$

which is easy for computation in English measures.

The above formula has received a marked confirmation by the experiments of Dr. A. Sprung with an Assman aspiration psychrometer. The results are given in "Das Wetter," Vol. V, p. 105, and show the same value of the constant adopted here. We may feel assured that this formula is

<sup>&</sup>lt;sup>1</sup>Compt. Rend., Paris, 1845, xx, 1127, 1220; 1852, xxxv, 930.

<sup>&</sup>lt;sup>2</sup> Am. Met. Jour., Ann Arbor, 1885, i, 342, 396.

exact, and the table may be used for all properly ventilated psychrometers.

The following formula has been deduced by Professor Ferrel from a long series of observations with the sling psychrometer at Colorado Springs and Pike's Peak by Professor Marvin:

$$x = f - .000367 (t - t'), p \left(1 + \frac{t - t'}{1571}\right)$$

The temperature is in (F.) degrees. Substituting,

$$p = 29.4$$
, we have, for  $t - t' = 10^{\circ}$ ,  $x = f - .011 (t - t')$ ,

which agrees with the above formula in all cases except when the air is very dry, and even then the difference seldom amounts to 1° in the computed dew-point, which is far within the accuracy of vapor pressures used.

While these tables apply strictly only to sling or ventilated psychrometers, yet they will be but slightly in error for all shelters of fair exposure.

Regnault's original formula contained a slight modification for readings of the wet bulb when covered with ice, based on a theoretical difference in evaporation. Experiment, however, has shown that there is no difference in the results, whether the bulb be covered with ice or water, and no change has been introduced in these tables.

The tables have been computed for a constant barometer reading of 29.4 in., as the average air-pressure at the majority of stations in this country. It will be found that, up to 3000 feet the errors incident to the use of the psychrometer are much greater than will justify a correction for pressures differing from 29.4 in., but either Part II or III of the table will enable one to apply this refinement, if desired.

It will readily be seen, from the construction of the table, that, if there be given the dew-point from Regnault's condensing hygrometer, and the air-temperature, the relative humidity may be deduced without difficulty.

#### EXAMPLES.

Given, 
$$t = 65^{\circ}$$
;  $t' = 50^{\circ}$ ; then  $t - t' = 15$ .

From Table XXII, with the above values, we find; dew-point = 34°, and relative humidity = 31 per cent.

Given, 
$$t = 65^{\circ}$$
,  $t' = 55^{\circ}$ ,  $p = 26''$ .

Table XXII gives dew-point 47°.

From Table XVII, the vapor pressure for dew-point  $47^{\circ} = .322$ ; the correction of this from Table XXII, Part II, for  $t - t' = 10^{\circ}$  and p = 26'' is + .013. Table XVII, with vapor pressure = .335 gives dew-point  $= 48^{\circ}$ . Table XXII, with air-temperature  $= 65^{\circ}$  and dew-point  $= 48^{\circ}$ , gives relative humidity = 54 per cent. This correction to the dew-point for pressure, may be found much more readily from Table XXII, Part III, as follows:

Given, 
$$t = 65^{\circ}$$
,  $t' = 55^{\circ}$ ,  $p = 26''$ .

The dew-point =  $47^{\circ}$ , as before; Part III, with air-temperature =  $65^{\circ}$ , pressure = 26'', and  $t - t' = 10^{\circ}$ , gives correction =  $1^{\circ}$ ; hence, dew-point corrected for pressure =  $48^{\circ}$ , as before.

#### RELATIVE HUMIDITY FROM CONDENSING HYGROMETER.

Given,  $t = 65^{\circ}$ ; dew-point =  $40^{\circ}$ ; we have at once, relative humidity = 39 per cent.

While these tables are extended to  $-40^{\circ}$  F. and below for the dewpoint, yet it should be borne in mind that we have no experimental vapor tensions below  $-22^{\circ}$  F., but the tables are computed on extrapolated values from the formulæ. A series of experiments in the Northwest in winter extending Regnault's work 20 or 30 degrees lower would be of great value.

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# TABLE XXII.—DEW-POINT AND RELATIVE HUMIDITY. ENGLISH. PART I. (Original.)

Depression of the wet-bulb thermometer (t-t).

t	.02	-	.04		.00	3	.0	8	1.	0	1.	2	1.	4	1.	6	1.	s	2.	0	2.	2	2.		2.6	3	1
F.	d.p.		a.p.	r.h.	d.p.	r.h.	d.p.	r.b.	d.p.	r.h.	d b.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d,p.	r.h.	d.p.	r.b.	d.p.	r.h.	F.
-40 -39 -38 -37 -36	-60 66 -58 67 -56 68 -53 69 -51 70	3 -	-80 -76 -73	38																							-10 -39 -38 -37 -36
35 34 33 32 32	-49 71 -47 72 -44 73 -41 74 -39 76	2 -	69 -65 -62 -59 -56	44 46 48								,						100									-35 -34 -33 -32 -31
-30 -29 -28 -27 -26	-36 77 -34 78 -33 79 -31 86 -30 81	8	52 48 44 41 -37	56 - 58 - 60 -	-75 -69 -64 -59 -54	33 36 39																					-30 -29 -28 -27 -26
-25 -24 -23 -22 -21	-29 85 -27 85 -26 86 -25 86 -24 86	3 -	34 -32 -30 -29 -27	66 - 67 - 68 -		48	-63 -54 -5	9 26 2 30 6 34 1 37 5 39	—73 —66	3 20 4 24																	-25 -24 -23 -22 -21
-20 -19 -18 -17 -16	-23 86 -22 86 -21 87 -20 86 -18 86	6 - 7 - 8 -	-26 -25 -24 -22 -21	73 - 74 - 75 -	-29		$-3 \\ -3 \\ -3$	0 42 5 45 2 48 0 50 8 53	-50 $-43$ $-3$	7 28 3 32 3 35 7 38 3 41	-65 -54	1 18 2 22 4 26 6 29	-6	7 18									8				-20 -19 -18 -17 -16
-15 -14 -13 -12 -11	-17 88 -16 88 -15 9 -14 9 -13 9	9 -	-20 -19 -17 -16 -15	79 80 80	-22		-2 $-2$ $-2$	6 55 5 57 3 59 2 61 0 62	-25 -27 -27	1 44 9 46 7 49 5 51 3 53	-3 $-3$ $-2$	0 32 5 35 2 38 9 41 7 44	-4 $-4$ $-3$	8 21 9 25 2 28 6 31 2 34	-7 -6 -5	1 14 0 18 1 22 3 25	-7	4 12									-15 -14 -13 -12 -11
-10 - 9 - 8 - 7 - 6	$     \begin{array}{r}       -129 \\       -119 \\       -109 \\       -99 \\       -89      \end{array} $	2-	-10	83	-16 $-15$ $-14$ $-12$ $-11$	74 75 76	$-1 \\ -1 \\ -1 \\ -1$	9 64 7 65 6 67 5 68 3 70	-2 $-1$ $-1$	2 55 0 57 9 59 7 61 5 63	-2 $-2$ $-2$	5 47 3 49 1 51 0 53 8 55	-2 -2 -2	9 37 7 40 5 42 3 45 1 48	-3 -2 -2 -2	7 28 2 31 9 34 6 37 4 40	-4: -3: -3:	1 19 2 23 5 26 1 29 8 32	-6 -5	6 10 1 14 0 18 0 21 4 25	-56	14 18		9 10			-10 - 9 - 8 - 7 - 6
- 5 - 4 - 3 - 2 - 1	- 7 9 - 5 9 - 4 9 - 3 9 - 2 9	3-	-7 $-6$ $-5$	86 86 87 87 88	-8	78 79 80 81 81 82	-1	2.71 1.72 9.73 8.74 7.75	$-1 \\ -1 \\ -1 \\ -1$	0 68	$-1 \\ -1$	6 57 5 59 3 60 2 62 0 63	$-1 \\ -1 \\ -1 \\ -1$	9 50 7 52 6 54 4 56 2 57	-2 $-1$ $-1$	2 42 0 45 8 47 6 49 5 51	-2 $-2$ $-1$	5 35 3 38 1 41 9 43 7 45	-2 -2 -2	0 28 7 31 4 34 2 37 0 39	-35 -26 -26	21 24 27 3 30 3 33	-43 -36 -36	5 14 5 17 5 21 0 24 7 27	-64 -51 -40	11 14 18 21	
0 2 3 4	- 19 09 19 28 38	14 15 15 15	- 2 0	88 89 89 90 90	_	82 83 84 84 84 84 85 85	-	6 76 4 77 3 78 2 79 1 80	=	5 73 3 74	=	6 68 5 69		8 6. 6 6	1 -1	3 53 1 55 0 57 8 59 7 60	$-1 \\ -1$	5 47 3 49 2 51 0 53 8 55		8 42 6 44 4 46 2 48 0 50	-1: -1: -1:	30 8 38 0 41 4 43 3 45	$-2 \\ -1 \\ -1$	4 30 1 33 9 36 7 38 5 40	-25 -22 -20	24 28 31 33 35	3
5 6 7 8 9	4 9 5 9 6 9 7 9 8 9	95 96	4	90 91 91 92 7 92		2 86 3 86 4 86 5 87	3	0 81 2 81 3 82 4 83 5 83		1 76 0 77 1 78 3 78 4 79	7 -	2 71 1 72 0 73 2 74 3 75		4 66 2 66 1 66 0 76 2 7	8 — 9 — 0 —	5 62 4 63 2 64 1 66 0 67		7 55 5 56 4 66 3 6 1 6	1 -	9 52 7 54 6 56 4 57 3 59	Ξ	1 47 9 49 7 51 6 53 4 55	-1  -  -	3 43 1 45 9 47 7 49 6 51	-13 -11 - 5		6 7 8
10 11 12 13 14	10 1 11 1 12 1	96 96 96	10	92 9 92 9 93 1 93 2 93	1	7 88 8 88 9 89 0 89 2 90	9	6 84 7 85 8 85 9 86 11 86		5 80 6 81 7 81 9 81 0 81	1	4 76 5 77 6 78 8 78 9 78	3	3 7: 4 7: 5 7: 7 7: 8 7:	3 4 5	2 68 3 68 4 70 5 71 7 72		0 6 2 6 3 6 4 6 6 6	8	1 60 0 62 2 63 3 64 5 63		3 56 1 58 0 59 2 61 3 65	=	4 52 2 54 1 56 1 57 2 59	- 4	50 52	11 12 13
15 16 17 18 19	15 9 16 9 17 9	97 97 97	14 16 17	3 93 4 94 5 94 7 94 8 94	1 1 1 1	3 90 4 90 5 91 6 91 7 91		12 87 13 87 14 87 15 88 16 88	1	1 88 2 88 3 88 4 88 5 88	1 1 1 5 1	10 80 11 81 12 81 14 82 15 82		9 7 10 7 11 7 13 7 14 7	8 1	8 78 9 74 0 78 2 76 3 76	1	7 7 8 7 9 7 1 7 2 7	1 2 3 1	6 67 7 68 8 68 0 70 1 71	3	5 68 6 67 7 66 9 65 0 68		4 60 5 61 6 63 8 64 9 65		2 57 3 58 5 60 6 61 8 62	16 17 18
20	19	97	18	94	18	8 91	1	17 89	1	6 86	5 1	16 83	3	15 8	0 1	4 77	1	3 7	4 1	2 72	1	2 69	1	0 66	1	63	20
	.02		.0	4	.(	6		08	1	.0	1	.2	,	.4	1	.6	1	.8	2	0.0	2	.2	2	.4	2.	.6	

### XXII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

Depression of the wet-bulb thermometer (t-t').

	2.6	•	2.5	8	3.0	•	3.5	2	3.		3.0	3	3.5	3	4.6	,	4.5	2	4.4	1	81
	d.p.	r.b.	d.p.	r.h.	d.b.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d.b.	r.h.	d.p.	r.h.	d.p.	r.b.	F.
	-28 -25 -22 -20 -17	24 28 30 33 35	-34 -30 -26 -23 -20	18 21 25 28 31	-39 -34 -30 -27 -24	13 16 20 23 26	-37 -33 -29	13 16 19	-39 -34	11 14	-39	11			7						0 1 2 3 4
	-15 -13 -11 - 9 - 8	38 41 43 45 47	-18 -16 -13 -11 - 9	41	-21 -18 -16 -13 -11	28 31 34 36 38	-25 -22 -19 -16 -14	22 25 28 31 33	-29 -25 -22 -19 -16	18 21 24 27 30	-33 -29 -25 -22 -19	14 17 20 23 26	-35 -30 -26 -22		-35 -30 -26	12 15 18	-38 -32	9 13	-39	9	5 6 7 8 9
1	- 6 - 4 - 3 - 1 0	48 50 52 53 55	$     \begin{array}{r}                                     $	45 46 48 50 51	- 9 - 7 - 6 - 4 - 2	41 43 45 46 48	-12 -10 - 8 - 6 - 4	35 38 41 43 44	-14 -12 - 9 - 7 - 5	32 34 37 39 41	-16 $-14$ $-11$ $-9$ $-7$	29 31 34 36 38	-19 -16 -14 -11 - 9	28 30 32	-22 -19 -16 -13 -11	21 24 26 29 31		16 19 22 25 28	-32 -27 -23 -19 -16	22	10 11 12 13 14
1 8 miles	2 3 5 6 8	57 58 60 61 62	1 2 4 5 7	53 54 56 57 59	0 1 3 4 6	50 52 53 55 56	2 0 2 3 5	46 48 50 52 54	-3 -2 0 2 4	43 45 47 49 51	- 5 - 3 - 1 1 2	42 44 46		36 38 40 42 45	- 9 - 6 - 4 - 2 0	34 36 38 40 42	- 8 - 6 - 4	30 33 35 37 39	-13 -10 - 8 - 6 - 4	30 32 34	15 16 17 18 19
i.	9	63	8	60	7	58	6	55	5	53	4	50	3	47	1	44	0	41	- 1	38	20
	4.0		4.	,	5.0	0	5.5	2	5.4	ı	5.	6	5.1	8	6.	0	6.5	8	6.	4	-
	d.p.	r.b.	d.b.	r.h.	d.b.	r.h.	d.b	r.h.	d.b.	r.h.	d.p.	r.h.	d.b.	r.h.	d.p.	r.h.	d b.	r.h.	d.r.	r.h.	
	-37 -31 -26 -22 -18	9 13 16 18 21	-38 -31 -26 -22	8 12 15 18	-37 -31 -26	8 12 15	—39 —32	7 10	39	7											10 11 12 13 14
	$-15 \\ -12 \\ -10 \\ -8 \\ -5$	24 27 29 31 34	$     \begin{array}{r}       -18 \\       -15 \\       -12 \\       -10 \\       -7     \end{array} $	21 23 26 28 31	-22 -18 -15 -12 - 9	18 20 23 25 28	$^{-26}_{-22}$ $^{-18}_{-14}$ $^{-11}$	14 16 19 22 25	-31 -25 -21 -17 -14	10 13 16 19 22	-36 -29 -24 -20 -16	8 11 14 17 19	-37 -30 -24 -20	7 10 13 16	-35 -28 -23	8 11 14	-36 -28	7 10	-34	7	15 16 17 18 19
	- 3	36	- 5	33	- 6	30	<b>-</b> 9	27	-11	24	-13	22	-16	19	-18	16	-23	13	-27	11	20

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#### XXII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

	0.3	5	1.	0	1.	5	2.	0	2.	5	3.	0	3.	5	4.0	0	4.	5	5.0	0	5.	5	6.	0	
r.	d. p.	r. h.	d. p.	r. b.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. b.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. b.	d. p.	r. b.	d. p.	r. b.	F.
20 21 22 23 24	18 19 20 21 22	93 93 93	18 19 20	86 86 86 87 87	16 17 18	79 79 80 80 81	14 15 16	72 73 73 74 75	11 12 14	65 66 67 68 69	9 10 12	58 59 60 61 62	6 7 9	51 52 54 55 56	3 5 6	44 45 47 49 50	3			32	- 7	25 28 30	$-15 \\ -12$	16 19 21 24 26	20 21 22 23 24
25 26 27 28 29	23 24 25 26 27	94 94 95	23 24 25	88 88 89 89 89	21 22 23	82 82 83 83 84	20 21 22	76 76 77 78 78	18 19 20	70 71 72 72 73	16 17 18	63 65 66 67 67	13 15 16	57 59 60 61 62	11 13 14	52 53 54 56 57	10 11	46 47 49 50 52	8 9	40 42 43 45 47	4 6	34 36 38 39 41	- 1 1 3	28 30 32 34 36	25 26 27 28 29
30 31 32 33 34	28 29 30 31 32	95 95 95	28 29 30	90 90 90 90 90	26 28 29	84 84 85 85 85	25 27 28	79 79 80 80 81	23 25 26	73 74 75 76 76	22 23 25	68 69 70 71 72	20 21 23	63 64 65 66 67	19 20 21	58 59 61 62 63	16 18 19	53 54 56 57 58	14 16 17	48 49 51 52 53	11 13 15	43 45 46 47 49	11 13	38 40 41 43 44	30 31 32 33 34
35 36 37 38 39	33 35 36 37 38	96 96 96	34 35 36	91 91 91 92 92	32 33 34	86 86 87 87 88	31 32 33	81 82 82 83 83	29 30 32	77 77 78 79 79	28 29 31	72 73 74 75 75	26 27 29	68 69 69 70 71	25 26 28	64 64 65 66 67	23 24 26	59 60 61 62 63	22 23 24	54 55 56 57 58	20 21 22	50 51 52 53 54	18 19 21	45 47 48 50 51	35 36 37 38 39
40 41 42 43 44	39 40 41 42 43	96 96 96	39 40 41	92 92 92 92 92	37 39 40	88 88 88 88	36 38 39	84 84 84 85 85	35 36 37	80 80 81 81 81	34 35 36	76 76 77 77 78	32 34 35	72 72 73 74 74	31 33 34	68 68 69 70 70	31 32	63 64 65 66 67	28 29 31	59 60 61 62 63	26 27 28	55 57 58 58 59	25 26 28	52 53 54 55 56	40 41 42 43 44
45 46 47 48 49	44 45 46 47 48	96 96 96	44 45 46	92 93 93 93 93	43 44 45	89 89 89 89 90	42 43 44	85 86 86 86	41 42 43	82 82 83 83 83	40 41 42	78 79 79 79 80	38 40 41	75 75 76 76 76	37 39 40	71 72 72 73 73	36 37 38	67 68 69 69 70	35 36 37	64 65 66 66 67	33 34 36	60 61 62 63 63	32 33 35	57 58 59 60 60	45 46 47 48 48
50 51 52 53 54	49 50 51 52 53	97 97 97	49 50 51	93 93 94 94 94	48 49 50	90 90 90 91 91	47 48 49	87 87 87 87 88	46 47 48	83 84 84 84 85	45 46 47	80 81 81 81 82	44 45 46	77 77 78 78 79	43 44 45	74 74 75 75 76	42 43 44	70 71 72 72 73	41 42 43	67 68 69 69 70	39 41 42	64 65 66 66 67	38 40 41	61 62 63 63 64	50 51 52 53 54
55 56 57 58 59	54 55 56 57 58	97 97 97	54 55 56	94 94 94 94 94	54 55 56	91 91 91 91 92	53 54 55	88 88 88 89	52 53 54	85 86 86 86	51 52 53	82 83 83 83	50 51 52	79 80 80 80 81	49 50 51	76 77 77 78 78	48 49 50	73 74 74 75 75	47 48 49	70 71 71 72 72	45 47 48	68 68 69 69 70	44 46 47	65 65 66 67 67	55 55 55 55
60 61 62 63 64	59 60 61 62 63	97 97	59 60 61	94 94 95 95 95	59 60 61	92 92 92 92 92	58 59 60	89 89 89 90	57 58 59	86 87 87 87	56 57 58	84 84 84 84 85	55 56 57	81 81 82 82	54 55 56	78 78 79 79	53 54 55	75 76 76 77 77	53 55	78 73 74 74 74	52 54	70 71 71 72 72	50 52 53	68 68 69 69 70	61 62 63 64
65 66 67 68 69	68		64 66 67	95 95 95 95 95	64 65 66	92 92 93 93 93	63 64 65	90 90 90 90 90	62 63 64	87 88 88 88	61 62 63	85 85 85 86	60 61 62	82 83 83 83	60 61 62	80 80 80 81 81	59 60 61	77 78 78 78 78	58 59 60	75 76 76 76	57 58 59	72 73 73 74 74	56 57 58	70 71 71 71 71 72	6: 6: 6: 6:
70 71 72 73 74	71 72 73	98 98 98 98 98	70 71 72	95 95 95 95 95	69 70 71	93 93 93 93 93	68 69 70	90 91 91 91 91	68 69 70	88 88 88 88 88	68	86 86 86 86 86 86	66 67 68	83 84 84 84 84	65 66 67	81 82 82 82 82	64 65 66	79 79 80 80	68 64 66	77 77 77 78 78	62 63 65	74 75 75 75	62 63 64	72 72 73 73 74	7777
75 76 77 78 79	76 77 78	98 98 98 98	78 76 77	95 95 95 96 96	74 75 76	93 93 93 93 94	7: 7: 7:	91 91 91 91 5 91	72 74 78	89 89 89 89 89 89	75 75 75	87 87 87 87 87 87	71 72 73	84 85 85 85 85 85	70 71 72	82 82 83 83 83 83	69 70 71	80 80 80 81 81	65 70 71	78 78 78 79 79	68 69 70	76 76 76 77	67 68 68	74 74 74 75 75	*****

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0

#### XXIL-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

t	6.0	0	6.	5	7.0	0	7.	5	8.	0	8.	5	9.	0	9.	5	10.	0	10.	.5	11.	0	11.	5	12.	0	t
F.	d.p.	r.h.	d.p.	r.b.	d.b.	r.b.	d.p.	rb.	d.b.	r.h.	d.p.	r.b.	d.b.	r h.	d.p.	r.h.	d.p.	r.h.	d.p.	rb.	d.p.	r.h.	d.p.	r.h.	d b	r.h.	F.
20 21 22 23 24	-18 -15 -12 - 9 - 6	19 21 24		17	-70 -40 -28 -23 -18	6 9 11		5 9		1																	20 21 22 23 24
25 26 27 28 29	- 1 1 3	28 30 32 34 36	0		$     \begin{array}{r}       -14 \\       -10 \\       -7 \\       -4 \\       -2     \end{array} $	19 22 24	-17 $-13$ $-10$	12 14 16 19 21		8 11 14	-60 -30 -24 -18	5	-54 -30	3 6	<b>—</b> 70	1					Ì						25 26 27 28 29
30 31 32 33 34	9 11 13	38 40 41 43 44	8	33 35 37 38 40	3 5 7	28 30 32 34 35	- 1 2	23 25 27 29 31	$-\frac{5}{2}$		$-10 \\ -7 \\ -4$	16	-16 $-12$ $-8$	11 14 16	-40 $-25$ $-19$ $-14$ $-10$	9 12	-63 -32 -23 -18	5	-50 -28		<b>—74</b>	2					30 31 32 33 34
35 36 37 38 39	18 19 21	45 47 48 50 51	12 17 19	41 43 44 46 47	13 15 17	37 38 40 42 43	1:	33 34 36 36 38 39	10 12	29 30 32 34 35	7 9	24 26 28 30 32	4	20 22 24 26 28	- 3	16 18 20 22 24	- 1	14	-10	8 10 12 15 17		6	$-30 \\ -20$	7	—35 —23		35 36 37 38 39
40 41 42 43 44	25 26 28	52 53 54 55 56	2: 2: 2: 2:	2 48 3 49 4 50 5 51 7 52	22 23 25	44 46 47 48 49	19 21 23	3 41 9 42 1 43 3 45 4 46	17 18 21	37 38 40 41 43	17	33 35 36 38 39	13 15 17	30 31 33 34 36	10 12 14	26 28 29 31 32	12	22 24 26 28 29	1	19 3 21 3 22 9 24 26	3	15 17 19 21 23	- 5 - 1	11 13 15 17 19	$\frac{-6}{-2}$	8 10 12 14 16	40 41 42 43 44
45 46 47 48 49	32 33 35	57 58 59 60 60	3:	55 55 55 55 56 57	29 30 32	50 51 52 53 54	2:	5 47 7 48 9 49 0 50 1 51	26 27 29	44 45 46 47 48	24 25 27	2 40 4 42 5 43 7 44 8 45	25 24 21	37 38 40 5 41 7 42	20 22 23	34 35 37 38 38 39	18 20 22	31 32 34 2 35 3 36	10	3 28 5 29 7 31 9 32 1 33	13 15 17	24 26 28 29 30	10 12 14	21 23 25 26 28	10 12	18 20 22 23 25	45 46 47 48 49
50 51 52 53 54	38 40 41	61 62 63 63 64	3	5 58 7 59 8 60 9 61 1 61	36 37 38	56 57 57 58 58	3 3	3 52 4 53 6 54 7 55 9 56	33 34 36	49 50 51 51 52 53	31 31 31	46 47 3 48 49 5 50	30	3 43 3 45 4 46 3 47 4 48	28 30 31	40 42 43 44 44 45	25 25 30	37 39 340 41 42	21 21 21	3 35 5 36 7 37 8 38 0 39	23 25 27	32 33 35 36 37	21 23 25	29 30 32 33 34	19 21 23	26 28 29 31 32	50 51 52 53 54
55 56 57 58 59	44 46 47	65 66 67 67	4	2 62 3 63 5 64 6 64 7 65	42	56 60 61 61 62	4 4 4	0 57 1 57 2 58 4 59 5 60	41	54 55 55 2 56 4 57	39 40 41	51 52 53 53 54	30 30 40	549 50 50 51 52	30	46 47 48 49 49	34 36 37	3 43 4 44 5 45 7 46 9 47	33	40 3 42 5 43 6 44 8 45	31 33 35	38 39 40 42 43	31	36 37 38 39 40	28 30 31	33 34 36 37 38	55 56 57 58 59
60 61 62 63 64	50 52 53	68 68 69 69 70	5 5	8 65 9 66 1 66 2 67 3 67	48 50 51	68 68 64 64 64	4 4 5	6 60 7 61 9 61 0 62 1 62	48	5 58 5 58 5 59 6 60 6 60	41	5 56 7 57 8 57 9 58	44	5 54 5 54 5 56 5 56	43	50 3 51 52 5 53 7 53	43	0 48 2 49 3 50 4 51 6 51	4:	9 46 1 47 2 47 3 48 5 49	39 41 42	44 45 46 46 47	38 39 41	3 41 3 42 9 43 1 44 2 45	36 38 39	39 40 41 42 43	60 61 62 63 64
65 66 67 68 69	56 57 58	70 71 71 71 71 72	56 56 57	4 68 5 68 6 69 7 69 8 70	54 55 57	66 66 67 67	5 5	2 63 3 63 5 64 6 65 7 65	52 54 56	61 2 61 4 62 5 63 6 63	5	0 59 1 59 3 60 4 60 5 61	50	9 56 9 57 2 58 3 58 4 59	45 51 52	554 555 556 557 557	45 50 51	7 52 8 53 0 53 1 54 2 55	44	6 50 7 51 8 51 0 52 1 53	47	48 49 49 50 51	46	3 46 5 47 6 47 7 48 9 49	44 45 46	44 45 45 46 47	
70 71 72 78 74	62 63 64	72 72 73 73 74	6	0 70 1 70 2 71 3 71 4 72	60 61 62	68 68 68 68 70	6 6	8 66 9 66 0 67 2 67 3 68	58 59 61	64 64 65 65 66 66	55	6 62 7 62 9 63 0 63 1 64	56 58 58	5 60 6 60 6 61 6 62	5	5 58 7 58 8 59 9 60	56 56 57	3 55 5 56 6 57 7 57 8 58	5	2 53 4 54 5 55 6 55 7 56	54 54	52 52 52 53 54	53 53 54	50 50 50 51 52 52 52	51 52 53	48 48 49 50 50	72 73
75 76 77 78 79	67 68 68	74 74 74 75 75	6 6	5 72 6 72 7 73 8 73 9 73	68 67 68	70 70 71 71 71 71 71 71 71 71 71 71 71 71 71	6 6	4 68 5 68 6 69 7 69 8 70	64 65 66	66 67 67 68	66	2 64 3 64 4 65 6 65 7 66	60	62 63 63 63 64	6.	0 60 1 61 2 61 4 62 5 62	6	9 58 1 59 2 59 3 60 4 60	6 6	8 56 0 57 1 57 2 58 3 58	60	55 55 56 56 56 57	50	53 53 54 54 55 1 55	57 58 59	51 52 52 53 53	77
80	72	75	7	1 73	70	72	6	9 70	68	68	6	8 66	6	64	6	68	6	61	6	4 59	63	57	63	2 55	62	54	80

#### XXII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

The second of the second of the	1.00		And the second of the late of the second	2.0
Depression of	the	wet-bulb	thermometer (1	- t')

t	12	0.	12	.5	13	.0	13	.5	14	0	14	.5	15	0	15.	.5	16.	0	16.	.5	17.	0.	17.	5	18.	0	t
F.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.h.	d.b.	r.h.	d.p.	r.h.	d.p.	r,h.	d.p.	r h.	d.p.	r.h.	d.p.	r.h.	d.b.	r.h.	d.p.	r.h.	d.p.	r.h.	F.
40 41 42 43 44		10	-34 -19 -13 - 8 - 4	9	-74 -32 -22 -15 - 9	8	-40 -25 -17	3 5 7	63 28	24						1000											40 41 42 43 44
45 46 47 48 49		23	6 9	15 17 19 20 22	- 1 3 6	12 14 16 18 19	2	9 11 13 15 17	-19 -12 - 7 - 2 1	6 8 10 12 14	-34 -21 -14 - 8 - 3	2 5 7 9 11	-46 $-25$ $-16$ $-10$	6		1 3 5	-80 -32	1 3									45 46 47 48 49
50 51 52 53 54	17 19 21 23 25	28 29 31	16 18	23 25 26 28 20	14 16 18	21 22 24 25 27	11 13	23	8 11	16 17 19 20 22	4 7 10	13 15 16 18 19	3	10 12 13 15 17	2	9	$     \begin{array}{r}       -20 \\       -12 \\       -6 \\       -2 \\       2     \end{array} $	7	-38 -21 -13 - 5 - 2	2 4 6 8 10	-46 -23 -15 - 8	5	-58 -25 -16	1 3 5	-74 -28	1 2	50 51 52 53 54
55 56 57 58 59	27 28 30 31 33	34 36 37	28 30	31 32 33 34 36	25 26 28	28 30 31 32 33	22 24	26 27 28 29 31	20 22 24	23 25 26 27 29	20	21 22 24 25 26	15 18 20	18 20 21 23 24	12 15 18	16 17 19 20 22	9 12 15	14 15 17 18 20	5 9	11 13 14 16 17	5 9	9 11 12 14 15	4				55 56 57 58 59
60 61 62 63 64	38 39	40	37	37 38 39 40 41	33 35 37 38	34 35 37 38 38	32 34 35	32 33 34 35 36	30 32 34	30 31 32 33 34	28 30 32	28 29 30 31 32	26 28 30	25 27 28 29 30	24 26 28	23 24 26 27 28		22	18 20 22 24 26	$\frac{22}{23}$	20 22	17 18 20 21 22	18 20	16	12 15 18	13 14 16 17 18	60 61 62 63 64
65 66 67 68 69	44 45 46	44 45 45 46 47	43 44 45	42 42 43 44 45	41 43 44	39 40 41 42 43	40 41 43	37 38 39 40 41	38 40 42	35 36 37 38 39	37 39 40	33 34 35 36 37	35 37 39	31 32 33 34 35	36	29 30 32 33 33	34	27 29 30 31 32	34		29 31 33	24 25 26 27 28	25 27 29 31 33	$\frac{23}{24}$	25	22 23	65 66 67 68 69
70 71 72 73 74	51 52 53	48 48 49 50 50	49 51 52	46 46 47 48 48	48 50 51	44 45 45 46 47	47 49 50	42 43 43 44 45	46 47 49	40 41 42 42 43	45 46 48	38 39 40 41 41	43 45 46	36 37 38 39 40	42 44 45	34 35 36 37 38	41 43 44	33 34 35 35 36	39 41 43	31 32 33 34 35	38 40 41	29 30 31 32 33	40	27 28 29 30 31	35 37 38	26 27 28 29 30	70 71 72 73 74
75 76 77 78 79	57 58 59	51 52 52 53 53	56 57 58	49 50 50 51 52	55 56 57	47 48 49 49 50	54 55 56	46 46 47 48 48	53 54 55	44 45 45 46 47	52 53 54	42 43 44 44 45	50 52 53	40 41 42 43 43	49 51 52	39 39 40 41 42	48 50 51	37 38 39 39 40	47 49 50	35 36 37 38 39	48 48	34 35 35 36 37	45 46 48	32 33 34 35 36	45	31 31 32 33 34	75 76 77 78
80	62	54	61	52	60	51	59	19	58	47	57	45	56	44	55	42	54	41	53	39	52	38	51	36	50	35	80
	18	.0	19	,-	20	-	21	.0	22	.0	23	.0	21	.0	25	0.	26	0.	27	0.	28	0.	29.	0	30.	0	
59 60 61 62 63 64	8 12 15 18	13 14 16 17 18	4 8 12	9 10 12 13 15	-22 $-13$ $-6$ $0$ $4$ $8$	5 6 8 9	-63 -25 -14 - 6	4 6	-26 -15																		59 60 61 62 63 64
65 66 67 68 69	25 27 29	20 21 22 23 24	20 23 25	16 17 19 20 21	15 18 20	12 14 15 16 18	12	9 10 12 13 14	8			356	-28 $-16$	3													65 66 67 68
70 71 72 73 74	35 37 38	26 27 28 29 30	33	22 23 24 25 26	28 30 32	19 20 21 22 23	23 26 28	16 17 18 19 20	18 21 24	12 14 15 16 17	12 16 19	9 10 12 13 14	9 13	7	- 7	6 7	-32 -16 - 6	3	—30 —15								70 71 72 73 74
75 76 77 78 79	43 45 47	31 32 33 34	41 42 44	27 28 29 30 31	38 40 41	24 25 26 27 28	34 36 38	21 22 23 24 25	31 33 35	18 19 20 21 22	27 29 31	15 16 17 18 19	22 25 28	12 14 15 16 17	20 23	9 11 12 13 14	5 10 14 17 21	8	- 6 - 1 6 11 15	6 8	-28 -14 - 5 2 7	3	-26 -12 - 4	1 3 4	<b>—23</b>	1	75
80	50	35/	47	32	45	29	42	26	39	23	36	20	32	18	28	15	24	13	18	01/8		L I	1 3	5	1-11	3	

#### XXII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

t	1.0	)	2.	0	3.	0	4.	0	5.	0	6.	0	7.	0	s.	0	9.	0	10.	0	11.	.0	12	.0	t
F.	d.p.	r.h.	d.p.	r.b.	d b	r.h.	đ b.	r.b.	d.p.	r.b.	d.b.	r.h.	d.p.	r.h.	d.p.	r.b.	d.b.	r.b.	d.p.	r.b.	d.b.	r.b.	d.p.	r.h	F.
80 81 82 83 84	81 82	96 96 96 96 96	77 78 79 80 81	92 92 92 92 92 92	76 77 78 79 80	87 88 88 88 88	74 75 77 78 79	83 84 84 84 84	73 74 75 76 77	79 80 80 80 80	72 73 74 75 76	76 76 76	70 71 72 73 74	72 72 72 73 73	68 70 71 72 73	68 68 69 69	67 68 69 70 71	64 65 66 66	65 66 68 69 70	61 62 62 63	63 65 66 67 68	57 58 58 59 59	62 63 64 65 67	54 54 55 55 56	80 81 82 83 84
85 86 87 88 89	86 87	96 96 96 96 96	82 83 84 85 86	92 92 92 92 92	81 82 83 84 85	88 88 88 88 88	80 81 82 83 84	84 84 84 85 85	78 79 80 81 82	80 81 81 81 81	77 78 79 80 81	177	75 76 78 79 80	73 73 74 74 74	74 75 76 77 78	70 70 70 71 71	72 73 74 75 76	66 67 67 67 68	71 72 73 74 76	63 64 64 64	69 71 72 73 74	60 60 60 61 61	68 69 70 71 72	57 57 58	85 86 87 88 89
90 91 92 93 94	89 90 91 92 93	96 96 96 96 96	87 88 89 91 92	92 92 92 93 93	86 87 88 89 90	88 89 89 89 89	85 86 87 88 89	85 85 85 85 86	84 85 86 87 88	81 82 82 82 82 82	82 83 84 85 86	78 78 78 78 79	81 82 83 84 85	75 75 75 75 75	79 80 82 83 84	71 71 72 72 72 72	78 79 80 81 82	68 69 69 69	77 78 79 80 81	65 65 66 66	75 76 77 78 80	62 62 62 63 63	74 75 76 77 78	59 59 59 60 60	90 91 92 93 94
95 96 97 98 99	94 95 96 97 98	96 96 96 96 96	93 94 95 96 97	93 93 93 93 93	91 92 93 94 95	89 89 89 89	90 91 92 93 94	86 86 86 86 86	89 90 91 92 93	82 82 82 83 83	87 88 90 91 92	79 79 79 79 80	86 87 88 89 90	76 76 76 76 76	85 86 87 88 89	72 73 73 73 73 73	83 84 86 87 88	69 70 70 70 70	82 83 84 85 86	66 67 67 67 68	81 82 83 84 85	63 64 64 64 65	79 80 81 83 84	60 61 61 61 62	95 96 97 98 99
100 101 102 103 104	101 102	97 97 97 97 97	98 99 100 101 102	93 93 93 93 93	96 97 98 99 100	90 90 90 90 90	95 96 97 98 99	86 86 86 87 87	94 95 96 97 98	83 83 83 83 83	93 94 95 96 97	80 80 80 80 80	91 92 93 94 96	77 77 77 77 77	90 91 92 93 94	74 74 74 74 74	89 90 91 92 93	71 71 71 71 71 72	87 88 90 91 92	68 68 69 69	86 87 88 89 90	65 65 66 66	85 86 87 88 89	62 63 63 63	100 101 102 103 104
105 106 107 108 109	105 106 107	97 97 97 97 97	103 104 105 106 107	93 93 93 93 93	101 102 103 104 105	90 90 90 90 90	100 101 102 103 104	87 87 87 87 87	99 100 101 102 103	84 84 84 84 84	98 99 100 101 102	81 81 81 81 81	97 98 99 100 101	78 78 78 78 78	95 96 97 98 99	75 75 75 75 75	94 95 96 97 98	72 72 72 72 73	93 94 95 96 97	69 69 70 70	91 93 94 95 96	66 66 67 67 67	90 91 92 93 94	64 64 64 65	105 106 107 108 109
110 111 112 113 114	110 111 112	97 97 97 97 97	108 109 110 111 112	94 94 94 94 94	107 108 109 110 111	90 90 90 90 91	105 106 107 108 109	87 87 87 87 88	104 105 106 107 108	84 84 84 85 85	103 104 105 106 107	81 82 82 82 82	102 103 104 105 106	78 78 79 79 79	101 102 103 104 105	76 76 76 76 76	99 100 101 102 103	73 73 73 73 74	98 99 100 101 102	70 70 71 71 71	97 98 99 100 101	68 68 68 68	96 97 98 99 100	65 65 66 66	110 111 112 113 114
115 116 117 118 119	115 116 117	97 97 97 97 97	113 114 115 116 117	94 94 94 94 94	112 113 114 115 116	91 91 91 91 91	110 111 112 113 114	88 88 88 88	109 110 111 112 113	85 85 85 85 85	108 109 110 111 112	82 82 82 82 82	107 108 109 110 111	79 79 79 79 80	106 107 108 109 110	76 76 77 77 77		74 74 74 74 74	103 104 105 106 107	71 71 71 72 72	102 103 104 105 106	69 69 69 69	101 102 103 104 105	66 66 67 67	115 116 117 118 119
120 121 122 123 124	120 121 122	97 97 97 97 97	118 119 120 121 122	94 94 94 94 94	117 118 119 120 121	91 91 91 91 91	115 117 118 119 120	88 88 88 88 88	114 115 116 117 118	85 85 85 85 85	113 114 115 116 117	83 83 83 83 83	112 113 114 115 116	80 80 80 80 80	111 112 113 114 115	77 77 77 78 78	110 111 112 113 114	75 75 75 75 75	108 110 111 112 113	72 72 72 73 73	107 108 109 110 111	70 70 70 70 70	106 107 108 109 110	67 67 68 68	120 121 122 123 124
125 126 127 128 129	125 126 127	97 97 97 97 97	123 124 125 126 127	94 94 94 94 94	122 123 124 125 126	91 91 91 91 91	121 122 123 124 125	88 89 89 89	119 120 121 122 123	86 86 86 86 86	118 119 120 121 122	83 83 83 83 83	117 118 119 120 121	80 80 81 81 81	116 117 118 119 120	78 78 78 78 78	115 116 117 118 119	75 76 76 76 76	114 115 116 117 118	73 73 73 73 73	112 114 115 116 117	70 71 71 71 71 71	111 112 113 114 115	68	125 126 127 128 129
130 131 132 133 134	130	97 97 97 97 97	128 129 130 131 132	94 94 94 94 94	127 128 129 130 131	$\frac{92}{92}$	126 127 128 129 130	89 89 89 89	124 125 126 128 129	86 86 86 86 86	123 124 125 126 127	83 84 84 84 84	122 123 124 125 126	81 81 81 81 81	121 122 123 124 125	79 79 79	120 121 122 123 124	76 76 76 76 76	119 120 121 122 123	74 74 74	118 119 120 121 122	71 72 72	117 118 119 120 121	69 69 69	130 131 132 133 134
135 136 137 138 139	135	97 97 97 97 97	133 134 135 136 137	94 94 94 95 95	132 133 134 135 136	$\frac{92}{92}$	131 132 133 134 135	89 89 89 89	130 131 132 133 134		128 129 130 131 132		127 128 129 130 131	81 82 82 82 82	129 130	79	125 126 127 128 129	77 77 77 77 77	124 125 126 127 128	74 75	123 124 125 126 127	73	122 123 124 125 126	70	135 136 137 138 139
140	139	97	138	95	137	92	136	89	135	87	133	84	132	82	131	79	130	77	129	75	128	73	127	71	140

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XXII,-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

#### DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

Depression of the wet-bulb thermometer (t-t).

	24.	0	25	0.	26	.0	27	0.	24	0	29.	0	30.	0	31.	0.	32.	0.	33	0.	34.	0	35.	0	36	0.	
t ⊮.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	r. h.	d. p.	1r. h.	đị p.	r. h.	F
. 00123	32 35 37 39 41	19 20 21	31 33 35	15 16 17 18 19	26 29 31	13 14 15 16 17	22 25 27	10 11 12 13 14		9 10 11	3 8 13 17 20	6 7 8	-11 -2 4 9	6	-74 -21 - 9 - 1	1 2 3 4 5	-54 -19 - 7		-40	1							. errrr
85 86 87 88 89	42 44 46 48 49	23 24 25	41 43 45	20 21 22 22 23	38 40 42	17 18 19 20 21	35 37 39	15 16 17 18 19	30 33 35	13 14 15 16 16	26 29 31	10 11 12 13 14	27		11 15 19 22 25	8	1 7 12 16 20	6	-16 - 5 3 8 13	3 4 5	-30 -12 - 2 4	1 2 3 4	-25 -10	1 2			*****
90 91 92 93 94	51 53 54 56 57	27 28 29	50 52 53	24 25 26 26 27	47 49 51	22 23 23 24 25	45 46 48	20 20 21 22 23	44	18 19 20	38 41 43	15 16 17 18 18	35 37 39	13 14 15 16 16	31 34 36	11 12 13 14 14	29 32	9 10 11 12 13	17 21 25 28 31	8 9 10	10 15 19 23 26		- 1 6 12 16 20	5	-20 - 7 1 8 13	3 4	9999
95 96 97 98 99	59 60 61 63 64	30 31 32	58 59 61	28 28 29 29 30	56 57 59	25 26 27 27 28	53 55 57	23 24 25 25 26	49 51 53 54 56	22 23 23	48 50 52	19 20 21 21 22	46 47 49	17 18 19 19 20	43 45 47	15 16 17 18 18	41	13 14 15 16 16	36 38 40	11 12 13 14 15	32 34 37	10 10 11 12 13	33	8 9 10 10 11	18 22 25 28 31	8 9	9999
100 101 102 103 104	66 67 68 70 71	33 34 34	65 66 68	31 32 32 33	63 65 66	29 29 30 30 31	64	27 27 28 28 29	57 59 61 62 63	25 26 26	58 60	23		21	52 54 55	19 20 20 21 22	51 53	17 18 19 19 20	47 49 50	15 16 17 17 18	44 46 48	14 14 15 16 16	40 43 45	12 13 13 14 15	37 39 41	10 11 12 12 12 13	10 10 10 10
105 106 107 108 109	72 74 75 76 77	36 36 37	72 73 74	33 34 34 35 35	70 71 73	31 32 32 33 33	68 70 71		65 66 68 69 71	28 29 29	63 64 66 67 69	26 27 27	64	$\frac{25}{25}$ $\frac{25}{26}$	63	$\frac{23}{23}$	56 58 60 61 63	$\frac{21}{22}$	56 57 59	19 20 21 21	57		51 52 54	15 16 17 17 18	48 50 52	14 14 15 16 16	10 10 10 10
110 111 112 113 114	79 80 81 82 83	38 39 39	77 78 79 81 82	37	78 79	34 34 35 35 36	77	33 33	72 73 74 76 77	31 31 32	70 71 73 74 75	29 29 30	68 70 71 72 74	$\frac{27}{28}$	66 68 69 71 72	26 26 27	64 66 67 69 70	24 24 25	64 65 67	22 22 23 23 24	60 62 63 65 66	$\frac{21}{22}$	61 63	19 19 20 20 21		18	11 11 11 11 11
115 116 117 118 119	85 86 87 88 89	40 41 41	85 87	39	83 84 85	36 37 37 37 38	82 84	35 35	78 80 81 82 83	33 33 34	77 78 79 81 82	31 32 32	75 76 78 79 80	30 30 31	73 75 76 77 79	28 29 29	72 73 74 76 77	26 27 27	71 72 74	24 25 25 26 26	68 69 71 72 74	23 24 24	69 70	21 22 22 23 23	64 65 67 68 70	$\frac{20}{21}$	11 11 11 11 11
120 121 122 128 128	90 92 93 94 95	42 42 43	89 90 91 93 94	40 41 41	89 90 91	38 38 39 39 40	86 87 89 90 91	37 37	85 86 87 88 89	35 35 36	83 84 86 87 88	33 34 34	82 83 84 85 87	32 32 33	81		78 80 81 82 83	29 29 29	81		75 76 78 79 80	$\frac{26}{26}$	77	24 24 25 25 25 25	73	23 24	12 12 12 12 12
125 126 127 128 129	96 97 98 100 101	44 44	95 96 97 98 99	$\frac{42}{42}$ $\frac{43}{43}$	93 95 96 97 98	41	92 93 94 96 97	39 39	91 92 93 94 95	37 37 38	89 90 92 93 94	35 36 36	88 89 90 91 93	34 34 34	86 87 89 90 91	32 32 33	85 86 87 88 90	31 31 31	84 86 87	29 29 30 30 30	82 83 84 85 87	28 28 29	81 83 84		78 80 81 82 84	25 25 26	12 12 12 12 12
130 131 132 133 134	102 103 104 105 106	45 46 46		44 44 44	99 100 101 103 104	$\frac{42}{42}$	98 99 100 101 102	40 40 41	97 98 99 100 101	39 39 39	95 96 97 99 100	37 37 38	94 95 96 97 98	35 36 36	92 94 95 96 97	34 34 35	91 92 93 94 96	32 33 33	89 91 92 93 94	31 31 32	88 89 90 92 93	30 30 30	86 88 89 90 91	28 29 29	85 86 87 89 90	27 27 28	13 13 13 13
135 136 137 138 139	107 108 110 111 112	47 47 47	106 107 108 109 110	45 45 45	105 106 107 108 109	43 44 44	104 105 106 107 108	42 42 42	102 103 104 106 107	40 40 41	101 102 103 104 105	39 39 39	100 101 102 103 104	37 37 38	98 99 101 102 103	36 36 36	97 98 99 100 101	34 35	95 97 98 99 100	33 33 33	94 95 96 98 99	31 32 32	93 94 95 96 97	30 30 31	91 92 94 95 96	29 29 30	13 13 13 13 13
140	113	48	112	46	110	44	109	43	108	41	107	40	105	38	104	37	103	35	101	34	100	33	99	31	97	30	14

### XXII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.

Depression of the wet-bulb thermometer (t-t).

t	36.	0	37.	0	38	.0	39.	.0	40.	.0	41	.0	42	.0	43	.0	44	.0	45.	.0	46	.0	47	.0	48	.0	t
F.	d.p.	r.h.	d.p.	lr.h.	d.p.	r.h.	d.p.	r.h.	d.b.	r.h.	d b.	r.h.	d.p.	r.h.	d.p.	r.h.	d.p.	r.b.	d.p.	r.h.	d.p.	r.b.	d.b.	r.b.	d.p.	lr.h.	F.
90 91 92 93 94	-20 - 7 1 8 13	1 2 3 4 5	-46 -16 - 4	1 2	-30 -11	1 2																					90 91 92 93 94
95 96 97 98 99	18 22 25 28 31	67899	10 15 19 23 27	6	- 1 6 12 17 21	3 3 4 5 6	-22 - 7 1 8 14		-62 -16 - 4 4	1 2	—30 —11																95 96 97 98 99
100 101 102 103 104	34 37 39 41 44	11 12 12	38	9 10 11 12	25 28 31 34 37	7 8 9 9 10	19 23 26 29 32	8	11 16 20 24 28	5	7 13 18 22	3 4 5	3 10 15	3	-15 - 2 6	2	-28 - 9										100 101 102 103 104
105 106 107 108 109	46 48 50 52 54	14 15 16	45 47 49	12 13 14 14 15	44	11 11 12 13 13	40	9 10 11 11 12	34 37 39	8	26 29 32 35 38	8 9	24 28 31	6 7	22 26	5 6	1 9 15 19 24	3 4 4	-20 - 4 11 17	2	-46 -12 0 8	1 2	-23 - 6		-74	0	105 106 107 108 109
110 111 112 113 114	55 57 59 60 62	18 18 19	54 56 58	15 16 17 17 17	52 54 56	14 15 15 16 16	49 51 53	13 13 14 14 15	46 48 50	11 12 12 13 14	43 45 47	10 10 11 12 12	42	8 9 10 10	33 35 38 41 43	8 8	28 31 34 37 40	7 8	21 25 29 32 35	7	14 19 24 28 31	5 5	11 16 21 26	3 4 4	-15 - 1 7 14 19	1 2 3	110 111 113 113 114
115 116 117 118 119	64 65 67 68 70	20 21 21	63 65 66	18 19 19 20 20	61 63 64	17 17 18 18 19	59 60 62	16 16 17 17 18	56 58 60	14 15 15 16 16	54 56 57	13 13 14 15 15	51 53 55	12 12 13 13	48 50 52	10 11 11 12 12	47 49	9 10 10 11 11		8	34 37 40 43 45	8 8	30 33 36 39 42	6 7 7	24 28 31 34 37	5	111
120 121 122 123 124	71 73 74 75 77	23 23 24	71 72 74	21 21 22 22 23	69 70 72	19 20 20 21 21	67 68 70	18 18 19 19 20	65 66 68	17 17 18 18 19	63 64 66	16 16 17 17 18	60 62 64	14 15 15 16 16	58 60 61	13 13 14 14 15	55 57 59	12 12 13 13 14	52 54 56	11 12 12 12 13	50 52 54	10 10 11 11 12	51	9 10 10 11	40 43 46 48 50	9 9	12: 12: 12: 12: 12:
125 126 127 128 129	78 80 81 82 84	25 25 26	79 81	$\frac{23}{24}$	76 78 79	22 22 23 23 24	74 76 77	20 21 21 22 22 22	73 74 75	19 20 20 21 21	71 72 74	18 19 19 19 20	69 70 72	17 18 18 19	67 68 70	15 16 16 17 17	64 66 68	14 15 15 16 16	62 64 65	13 14 14 15 15	60 62 63	12 13 13 14 14	57 59 61	11 12 12 13 13	54 56 58	10 10 11 11 12	12: 12: 12: 12: 12:
130 131 132 133 134	85 86 87 89 90	27 27 28		26 26 26	83 84 86	24 24 25 25 25 25		24	80 81 82	21 22 22 23 23	78 79 81	20 21 21 21 21 22	76 78 79	19 19 20 20 21	74 76 77	18 18 19 19	72 74 75	17 17 18 18 18	70		68 70 71	15 15 16 16	66 68 69	14 14 14 15 15	62 64 66 67 69	13 14	13 13 13 13 13
35 36 37 38 39	91 92 94 95 96	29 29 30	90 91 92 93 95	$\frac{27}{28}$	89 91 92	27	87 88 89 90 92	$\frac{25}{25}$	86 88 89	23 24 24 24 25	85 86 87	22 22 23 23 24	83 84	21 21 22 22 22 22	80 81 83 84 85	$\frac{20}{20}$	80 81	20	76 78 79 81 82	18 18 19		17	74		71 72 74 75 77	15 15 16	136 136 137 138 138
140	97	30	96	29	94	28	93	26	91	25	90	24	88	23	87	22	85	21	83	20	82	18	80	17	78	16	140
	36.	0	37.	0	38.	0	39.	0	40.	0	41.	.0	42	.0	43.	0	44.	0	45.	0	46.	0	47.	0	48.	0	

LE XXII.—DEW-POINT AND RELATIVE HUMIDITY. ENGLISH.
PART II.

Reduction of dew-point for pressure.

19"	28"	27''	26"	25"	24"	28"	¥2	21"	<b>%0</b>	19"	18"	<i>t</i> — <i>t'</i> <b>F.</b>
.000	.001	.001	.001	.002	.002	.003	.003	.003	.004	.004	.004	1
.000	.001	.002	.002	.003	.004	.005	.006	.006	.007	.008	.008	34
.000	.001	.002	.003	.004	.006	.007	.008	.009	.010	.011	.012	8
.000	.002	.003	.005	.006	.008	.009	.011 .014	.012	.014	.015 .019	.017	5
100.	.002	.00%	.000	.000	.010	.012	.014	.015	.017	.019	.021	
.001	.003	.005	.008	.010	.012	.014	.016	.019	.021	.023	.025	5
.001	.003	.006 .007	.009	.012	.014	.017	.019	.022	.024	.027	.030	7
.001	.004	.007	.010	.013	.016	019	.022	.025	.028	.031	.034	<b>8</b> j
.002	.005	.008	.012	.015	.018	.022	.025	.028	.032	.035	.038	.9
.002	.005	.009	.013	.017	.020	.024	.027	.031	.035	.039	.043	10
.002	.006	.010	.014	.018	.022	.026	.030	.034	.038	.043	.047	11 12
.002	.006	.010	.015	.019	.024	.028	.032	.037	.041	.046	.051	12
.002	.006	.011	.016	.021	.026	.030	.035	.040	.045	.050	.055	18
.002	.007	.012	.017	.022	.028	.033	.038	.043	.048	.054	.059	14
.002	.007	.013	.019	.024	.030	.035	.041	.046	.052	.058	.063	15
.002	.008	.014	.020	.026	.032	.038	.044	.049	.055	.061	.067	16
.002	.008	.015	.021	.027	034	.040	.046	.053	.059	.065	.067 .072	17
.002	.009	.016	.022	.029	.036	.042	.049	.056	.062	.069	.076	18
.002	.009	.017	.024	.031	.038	.045	.052	.059	.066	.073	.080	19
.003	.010	.018	.026	.033	.041	.048	.055	.063	.070	.077	.085	20
.003	.011	.019	.027	.034	.042	.050	.058	.066	.073	.081	.089	21
.003	.011	.020	.028	.036	.044	.052	.061	.069	.077	.085	.093	22
.003	.012	.021	.029	.038	.046	.055	.063	.072	.081	.089	.098	28
.004	.013	.021	.030	.039	.048	.057	.066	.075	.084	.093	.102	24
.004	.013	.022	.032	.041	.050	.060	.069	.078	.088	.097	. 106	25
.004	.013	.023	.033	.043	.052	.062	.072	.081	.091	.101	.111	26 27 28
.004	.014	.024	.034	.044	.054	.065	.075	.085	.095	.105	.115	27
.004	.015	.025	.036	.046	.056	.067	.077	.088	.098	.109	.119	28
.004	.015	.026	.037	.048	.059	.069	.080	.091	.102	.113	.124	29
.004	.016	.027	.038	.049	.061	.072	.083	.094	.105	.117	.128	80
.005	.016	.028	.039	.051	.063	.074	.086	.097	.109	.121	.132	81
.005	.017	.029	.041	.053	.065	.077	.089	.101	.113	.125	.137	32 33
.005	.017	.030	.042	.054	.067	.079	.092	.104	.116	.129	.141	88
.005	.018	.031	.043	.056	.069	.082	.094	.107	.120	.133	.145	34
.005	.018	.032	.045	.058	.071	.084	.097	.110	.123	.137	.150	85
.005	.019	.032	.046	.059	.073	.086	.100	.114	.127	.141	.154	36
.006	.019	.033	.047	.061	.075	.089	.103	.117	.131	.145	.158	87
006	.020	.034	.049	.063	.077	.091		.120				88
.006	.021	.035	.050	.065	.079			.123				89
.006	.021	.036	.051	.066	.081	.096	.111	.126	.142	.157	.172	40
.005 .006		.018 .019 .019 .020	.018 .032 .019 .032 .019 .033 .020 .034 .021 .035	.018 .032 .045 .019 .032 .046 .019 .033 .047 .020 .034 .049 .021 .035 .050	.018	.018	.018	.018	.018	.018	.018	.018

# XXIII.-DEW-POINT AND RELATIVE HUMIDITY. ENGLISH. PART III.

#### Correction of Dew-Point for Pressure.

Add to dew-point at 29.4".

											-	AIF	R F	R	ES	SUF	E.								_						_
t		2	27		İ	þ	5	96			ľ		5			E			2	1					I				23	**	
F.	5	10	15	20	25	5	10	15	20	25	5	10	15	20	25	1	2	3	4	5	10	5 2	20 2	5	1	2	3	4	5	10 1	5 20 25
-10 0 10 20 30 40	0 0 0 0 0	3	1			21					2 1					1 1 0 0 0	3 2 1 0 0	4 2 1 0	3 2 1	3 2					110	2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4 2 2 1	4 2 1	302		
50 60 70 80 90 100	0 0 0 0	2 1 0 0 0	3 2 1 1 0 0	3 2 1 1 1 1	4 3 2 1	1 0 0 0 0 0	1 1 1 0 0	3 2 1 1 1 1	4 2 1 1	522	1 1 0 0 0 0	3 2 1 1 1 0	4 2 1 1 1	5 3 2 1	6 3 2	0 0 0 0	000000	0 0 0 0 0	1 0 0 0 0 0	1 0 0 0 0	3 2 1 1 1 0	5 3 2 1 1	6321	7 4 3		0 0	0 0 0	0 0 0 0 0 0	1 1 0 0 0	4 2 2 1 1 1	6 3 7 2 4 1 2 1 2
					2	5			-						21									2	0.,						
	1	2	3	4	5	10	15	20	25		1	2	3	4	5	10	15	20	25		1	2	3	4	5 1	0 13	20	25			
- 10 0 10 20 30 40	1 1 0 0 0	5 3 2 1 0	5321	531	4 2						3 2 1 1 0 0	6 3 2 1 0	6 3 2 1	531	4 2						4 2 2 1 0 0	63210	6 3 2 1	532	4 3						
50 60 70 80 90	0 0 0 0	0000	0000	0000	1 1 0 0	3 2 1 1	7 4 2 2 2	8 4 3	5		00000	0 0 0	0000	00000	1 1 1 1 0	5 3 2 1 1	7 4 3 2	9 5 3	6		0 0 0	0000	0000	1 0 0 0	2 1 1 1 1	6 3 8 2 2 2 2	5 5				
					1	9"									18																
	1	2	3	4	5	10	15	20			1	2	3	4	5	10	15	20													
- 10 0 10 20 30	4 2 2 1 0	7 4 2 1	7 4 2	64	5						4 2 2 1 1	7 4 3 2	7 4 3	74	5																
40 50 60 70 80	0000	0000	1	111		4	5 5 5 5 5	6			0000		VCC.	2 1 1 0	3 2 1 1 1 1	7 4 3 2	6 4	6													

# TABLE XXIII.—DEW-POINT AND RELATIVE HUMIDITY. FRENCH. (Original.)

x = f - .00068 (t - t) p. p = 750 mm.

Depression of wet-bulb (t-t').

t	0.	5	1	.0	1	1.	5	2	0.	2	5	3.	0	3.	.5	4	0.	4.	5	5	0.	5.	5	6.	0	6	.5	7.	0	t
c.	d.b.	r. h.	d.b.	, q		d.p.	r. b.	d.p.	r. b.	d.p.	r. b.	d.p.	r. h.	d.b.	r. b.	d.p.	r.h.	d.b.	r. b.	d.b.	r.b.	d.p.	r. h.	d.p.	r. h.	d.p.	r. b.	d.p.	r. h.	c.
- 15 - 14 - 13 - 12 - 11	-17 -16 -14	80 81 82	-1	0 6 9 6 7 6	3 -	-25 -23 -21	39 43 47	-29 -26 -24	30	-31	18													4						-15 -14 -13 -12
- 10 - 9 - 8 - 7 - 6	-11 -10 - 9	85 86 87	-1: -1: -1	3 7 2 7 1 7	2 -	-16 -15 -13	56 59 61	-20 -18 -16	42 45 48	-27 -24 -22 -20 -18	27 31 35	$-28 \\ -25$	23		15											-				-10 - 9 - 8 - 7 - 6
- 5 - 4 - 3 - 2 - 1	- 6 - 5 - 3	90	- 1	7 7 7 8 7 8	9-	8 7	67 69 70	-12 -10 - 9	56 58 60	-16 -14 -12 -11 - 9	45 48 50	-15 -13	35 38 41	-22 -19 -17	28 32	-24 -21	18 22	-27	13		9									- 5 - 4 - 3 - 2 - 1
0 1 2 3 4	1 2	91 91 92 92 92	- 5	3 85 2 85 3 86 3 86 3 86 3 86	1 -	- 3	74 75 76	- 5 - 4 - 2	66 67 69	- 8 - 6 - 5 - 4 - 2	57 59 61	- 9 - 7 - 6	49 52 54	-11 - 9 - 8	41 44 46	-14 -12 -10	33 36 39	-12	25 29 32	-21 -18 -15	21 25	-28 -23 -19 -16	14 18	-31 -25 -21	11	-27	8			+ 1 2 3 4
5 6 7 8 9	5 6 7	93 93 93 94 94	1	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	5	3 4 5	78 79 80 81 81	3 4	71 72 73 74 75	1 2	64 66 67 68 70	- 1 0 1	57 59 61 62 64	- 3 - 2 0	51 53 55 56 58	- 5 - 3 - 2	44 46 48 50 52	- 7 - 5 - 3	40	- 9 - 7 - 5	34	- 7	28 31 33	-17 -14 -12 -10 8	22 25 28	-18 -15 -12	16 19 22	-19	10 13 17	5 6 7 8 9
10 11 12 13 14	10 11 12	94 94 94 95 95	10	8 88 9 88 9 88 1 88 2 86	3	8		9	76 77 78 79 79	6 7 8	71 72 73 74 74	5 6 7	65 66 67 68 69	5 6	59 61 62 63 64	4 5	54 56 57 59 60	1 2 4	49 50 52 54 55	1 2	43 45 47 49 51	- 2 0 1	38 40 42 44 46	- 2 - 1	33 35 38 40 42	- 6 - 4 - 2	28 30 33 35 37	- 4		10 11 12 13 14
15 16 17 18 19	15 16 17	95 95 95 95 96	18 18	90 90 90 90 90 90 90	0	12 13 15 16 17	85 86 86	13 14 15	80 81 81 82	12 13 14	75 76 76 77 78	11 12 13	70 71 72 73 74	10 11 12	66 67 68 69 69	10 11	61 62 63 64 65	8 9 10	56 58 59 60 61	8 9	52 53 55 56 57	5 7 8	48 49 51 52 53	5 7	43 45 46 48 50	4 6	39 41 43 45 46	1 3 4	35 37 39 41 42	15 16 17 18 19
20 21 22 23 24	20 21 22	96 96 96 96	20	999999999999999999999999999999999999999	1	18 19 20 21 22	87 87 87	18 19 20	82 83 84 84 84	17 18 19	78 79 79 80 80	16 17 19	74 75 75 76 76	16 17 18	70 71 72 72 73	15 16 17	66 67 68 68 69	14 15 16	62 63 64 65 66	13 14 15	58 59 60 61 62	13 14	56	11 12 13	51 52 53 54 55	10 11 12	47 49 50 51 52	9 10 11		20 21 22 23 24
25 26 27 28 29	25 26 27	96 96 96 96	20 20 20	1 95 5 95 5 95 7 95 8 95	2	23 24 25 26 27	88 88 89	23 24 25	84 85 85 85 86	22 23 25	81 81 81 82 82	22 23 24	77 77 78 78 79	21 22 23	73 74 74 75 76	20 21 22	70 71 71 72 72	19 21 22	66 67 68 68 69	19 20 21	63 64 64 65 66	18 19 20	62	17 18 19	56 57 58 59 60	16 17 18	53 54 55 56 57		51 52 53	25 26 27 28 29
30 31 32 33 34	30 31 32	96 96 96 96 97	30	999999999999999999999999999999999999999	3	30	89 90 90	28 29 30	86 86 86 86 87	28 29 30	82 83 83 83 84	27 28 29	79 79 80 80 81	26 27 28	76 76 77 77 77	26 27 28	73 74 74 74 75	25 26 27	70 70 71 71 72	24 25 26	67 68 68 69	26		23 24 25	61 62 63 63	22 23 24	58 59 60 61	22	56 57 57	30 31 32 33 34
35	34	97	34	1 93	3	33	90.	33	87	32	84	31	81	31	78	30	75	29	72	29	69	28	67	27	64	26	61	26	59	35

#### XXIII.-DEW-POINT AND RELATIVE HUMIDITY. FRENCH.

Depression of wet bulb (t-t).

t C.	7		7.	5	8		8.	5	9		9.	5	1	,	10.	5	11	ı	11.	5	15	2	12.	.5	18	3	C.
	d,p.	r.b.	d.p.	1r.b.	d.p.	r.b.	d.p.	r.b.	d.p.	lr.h.	d.p.	r.h.	d.p.	[r.h.	d.b.	r.h.	d.p.	r.b.	d.p.	r.b.	d.p.	r.h.	d.p.	r.b.	d.p.	r.h.	
+ 5 6 7 8 9	-19 -16	6 10 13 17 20	-25 -21	8 12 15	-27	6 10		5																			+56789
10 11 12 13 14	- 8 - 6 - 4	23 26 28 31 33	-11 - 8 - 6	18 21 24 26 28	-14 -11 - 8	13 16 19 22 24	-18 -14 -11	12 15 18 20	-19 -15	7 10 13 16	-19	9	-26 -20		-27	4											10 11 12 33 14
15 16 17 18 19	1 3 4	35 37 39 41 42	1 3	31 33 35 37 38	- 2 0 1	27 29 31 33 35	= 4 2 0	23 25 27 29 31	- 6 - 4 - 2	19 22 24 26 28	- 9 - 6 - 4	15 18 20 22 24	- 9 - 6	14			-28 -21 -16 -12 - 9	7 9 12	-29 -21 -16 -12	3 6 9 11	-30 -21 -16	6	-31 -21	2 5	-31	2	15 16 17 18
20 21 22 23 24	10 11	43 45 46 47 49	10	40 42 43 44 46	8 9	37 38 40 41 42	6 8	33 35 36 38 39	5 7	30 32 33 35 36	4 5	26 28 30 32 34	2	23 25 27 29 31	- 2 1 2	20 22 24 26 28	- 4 - 1	17 19 21 23 25	$-3 \\ -1$	14 16 18 20 22	$\frac{-6}{-3}$	11 13 15 17 19	- 8 - 5	8 10 13 15 17	-21 -16 -11 - 8 - 5	10 12	20 21 22 23 24
25 26 27 28 29	15 16 18	50 51 52 53 54	14 15 17	47 48 49 50 51	13 14 16	44 45 46 47 48	12 13 15	41 42 43 45 46	11 12 14	38 39 40 42 43	10 11 13	35 37 38 39 40	10 12	32 34 35 37 38	8		8 9	26 28 30 31 33	5 7	24 26 28 29 31	5	21 23 25 26 28	2 4 5	19 21 23 24 25	2	16 18 20 22 23	25 25 25 25 25
30 31 32 33 34 35	21 22 23 25	55 56 57 57 58 59	20 21 23 24	52 53 54 55 55 56	19 21 22 23	49 50 51 52 53 54	19 20 21 22	47 48 49 49 50 51	18 19 20 21	44 45 46 47 48 49	17 18 19 21	41 42 44 45 46 46	16 17 18 20	39 40 41 42 43 44	13 15 16 18 19 20	38 39 40 41	14 15 17 18	34 35 36 37 39 40	11 13 14 16 17 18	33 34 35 36	12 13 15 16	29 31 32 33 34 35	10 12 14	27 28 30 31 32 33	9 11 12 14	25 26 27 28 30 31	30 31 32 33 34 34
	13		13.	.5	14	ı	14.	5	15		15.	.5	10	3	16.	5	17	7	17.	5	18	3	18.	5	19		
20 21 22 23 24	-21 -16 -11 - 8 - 5	7 10 12	-32 -21 -16 -11 - 8	579	-32 -21 -15 -11	4 7	-31 -21 -15	247	-31 -21	24	-31	2															2222
25 26 27 28 29	2 4	16 18 20 22 23	- 2 0 2	14 16 17 19 21	- 4 - 2 1	11 13 15 17 19	- 4 - 1		- 4	8	-20 -14 -10 - 6 - 3	6 8 10	-30 -20 -14 - 9 - 6	6	-29 -19 -13 - 9	6	-28 -18 -13	4	-27 -18	24	-25	2					22222
30 31 32 33 34 35	9 11 12 14	25 26 27 28 30 31	10 11 13	22 24 26 27 28 29	10 12	20 22 23 25 26 27	5 7 9 10	18 20 21 23 24 25	3 5 7 9	16 18 19 21 22 23	2 4 6 8	14 16 17 19 20 21	0 2 4 6	12 14 15 17 18 20	- 2 0 3 5	10 12 13 15 16 18	1 3	8 10 11 13 14 16	1	6 8 9 11 13 14	-17 -11 - 7 - 4 - 1	8	-24 -16 -10 - 6 - 3	8	-23 -15 -10 - 6 - 2	24689	3 3 3 3

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# XXIV TO XXX.—WIND TABLES.

#### TABLE XXIV.

LAMBERT'S FORMULA FOR THE DETERMINATION OF MEAN WIND DIRECTION.

#### INTRODUCTION.

Lambert's formula for the 8 principal wind directions is as follows:

Tan. 
$$A = \frac{E. - W. + (N.E. - S.W.) \cos. 45^{\circ} + (S.E. - N.W.) \cos. 45^{\circ}}{N. - S. + (N.E. - S.W.) \cos. 45^{\circ} - (S.E. - N.W.) \cos. 45^{\circ}}$$

in which N., N. E., etc., represent the number of times the wind has blown in each octant during the period under consideration. We assume that the wind velocity is the same from all points. If directions from 16 points are observed, half of each extra point should be added to the direction preceding and following; for example, with N. N. E. 6, N. E. 5, E. N. E. 3, E. 2, E. S. E. 4, we would enter the formula with N. E. 9.5, E. 5.5, etc. The result will be almost identical with that from the full formula of 16 points.

The table is in two parts: part I gives the product of any number with cos. 45° (.7071), and part II the value of the angle or its complement, in degrees. For the computations, the following form should be used:

a b c d e f g h i k l m n o p q r s part II angle E W N 8 NE 8W 8E NW e-f g-h 1 cos. 45 k cos. 45 a-b l+m c-d l-m o+n p+q r/s 2 12 20 26 13 9 0 10 4 -10 2.8 -7.1 -10 -4.3 -5 9.9 -14.3 4.9 19 N. 71 W.

The signs of  $\frac{r}{s}$  give the quadrant,

$$\frac{+}{+}$$
 = N. E.;  $\frac{-}{-}$  = S. W.;  $\frac{-}{+}$  = N. W.;  $\frac{+}{-}$  = S. E.

If the fraction  $\frac{r}{s}$  or  $\frac{s}{r}$  is not less than 188, divide both numerator and

denominator by any number till the values of r and s are found within part II. Always enter part II with the smaller number as the horizontal gument. If s be smaller than r, take the complement of the angle, as and in the table.

#### XXIV-XXX. WIND TABLES.

In the use of this table it will be found that the larger the figures, provided they are under  $\frac{148}{5}$ , the easier the computation. For example, suppose  $\frac{r}{s} = \frac{-18}{14}$ . In the table there is no 18 opposite 14, but if we multiply the fraction by 5 we have  $\frac{1}{2}$ , and the corresponding angle from part II is 38°, or taking the complement, since s is less than r, we have N. 52° W. The same result is attained if we multiply by 10.

TABLE XXIV.—LAMBERT'S FORMULA. (Original.) PART I.

Multiples of Cos. 45°.

Tons.	0	1	2	8	4	5	6	7	8	9	Tens.
0	0.0	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.7	6.4	0
10	7.1	7.8	8.5	9.2	9.9	10.6	11.3	12.0	12.7	13.4	10
20	14.1	14.8	15.6	16.3	17.0	17.7	18.4	19.1	19.8	20.5	20
80	21.2	21.9	22.6	23.3	24.0	24.7	25.5	26.2	26.9	27.6	80
40	28.3	29.0	29.7	30.4	31.1	31.8	32.5	33.2	33.9	34.6	40
50	35.4	36.1	36.8	37.5	38.2	38.9	39.6	40.3	41.0	41.7	50
60	42.4	43.1	43.8	44.5	45.3	46.0	46.7	47.4	48.1	48.8	60
70	49.5	50.2	50.9	51.6	52.3	53.0	53.7	54.4	55.2	55.9	70
80	56.6	57.3	58.0	58.7	59.4	60.1	60.8	61.5	62.2	62.9	80
90	63.6	64.3	65.1	65.8	66.5	67.2	67.9	68.6	69.3	70.0	90
100	70.7	71.4	72.1	72.8	73.5	74.2	75.0	75.7	76.4	77.1	100
110	77.8	78.5	79.2	79.9	80.6	81.3	82.0	82.7	83.4	84.1	110
120	84.9	85.6	86.3	87.0	87.7	88.4	89.1	89.8	90.5	91.2	120
180	91.9	92.6	93.3	94.0	94.8	95.5	96.2	96.9	97.6	98.3	180
140	99.0	99.7	100.4	101.1	101.8	102.5	103.2	103.9	104.7	105.4	140
150	106.1	106.8	107.5	108.2	108.9	109.6	110.3	111.0	111.7	112.4	150
160	113.1	113.8	114.6	115.3	116.0	116.7	117.4	118.1	118.8	119.5	160
170	120.2	120.9	121.6	122.3	123.0	123.7	124.5	125.2	125.9	126.6	170
180	127.3	128.0	128.7	129.4	130.1	130.8	131.5	132.2	132.9	133.6	180
190	134.4	135.1	135.8	136.5	137.2	137.9	138.6	139.3	140.0	140.7	190
200	141.4	142.1	142.8	143.5	144.2	145.0	145.7	146.4	147.1	147.8	200

#### XXIV.--LAMBERT'S FORMULA.

(Original.)

-							
	5588884	32822	25332	85555 85555	25255	25555	252525
8		<b>####</b>	##8##	ឧដ្ឋមន្ត	82885	11188	222221
40		<b>#####</b>	SESSE	22223	22822	821128	525544
3		44888	28828	88888	28888	12 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	555445
t-		33888	88888	ន្ទន្ទន្ទន្ទន្ទ	1285181	77 199	222220
94		33258	222222	ន្តន្តន្តន្តន	188119	12 19 11 11 11 11 11 11 11 11 11 11 11 11	544488
75	10	38888	22882	222222	1288312	116	4448591
3	1 4	188838	88488	222222	2027-1-	99999	4400000
- 65	1	38888	88588	88288	22822	15556	40000000
67	5	928882	88888	22222	687-129	25554	555555
4	9	888888	82828	22222	887-88	55222	222222
9	1 99	88338	85888	85858	56778	22444	22222
8	35	88888	22222	812823	FE000	52226	223222
88	39	28888	28288	1881881	55555	44888	222222
100	1 28	53888	88888	88885	99554 45555	40000	222222
98	1 28	88888	222222	11811	112244	22222	200000
150	1 5148	28888	82828	6518859	99944	22222	
- F	448	28888		118119	55440	1-0-1-1-1-1	522555
83	1 338		222222		2023 2 2 2 2 6 2 6 3	22222	112222
22	1 288	82822	28282	171 173	54485	22222	133350
1	1	88888	222222	55555	24223	22222	555550
8	1 288	88888	82828	79954	45555	22222	555500
A 90	3422	28228	22522	71 91 91 14 14	22222	111111	555000
	4388	ននានានា	13222	55554	22222	22222	5500000
Values of	3888	88888	20 119 117 116	3444	25552	12233	0000000
- F	3882	88999	02 118 119 119	54455	22222	55550	22000000
a   97	4888	ម្តម្ភម្ភម្ភម្ព	1281	22222	22223	010000	00000001-
2.83	44888	<u></u> 말설없임명	15 16 15	455555	22222	00000	00000FF
25	488888	22222	18 16 16 14 14	22222	10000	00000	********
83	32882	88228	71 25 44 4	52211	55500	G2 00 00 00 00	000000000
- 53	48888	12888	35445	22112	55200	∞ ∞ ∞ ∞ t-	
25	488888	22622	81 12 12 12 13	22222	50000	00 00 1-1-1-	
20	488882	88829	54555	11100	CD CD CD CD CD	f-t-t-t-t-	-00000
18 19	28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	20 21 18 19 17 19 15 16 14 15	112221	00000	000000	66677	000000
171	4888888	16119	22112	00000	Ø1-1-10	99999	0000000
16	1 8888888	85548	22222	0000000	1-1-1-00	910101010	0.00000000
15	32222328	<b>F3453</b>	11500	00001-1-	1-1-000	200000	101010444
7	3888885	54551	10000	30 30 t- t- t-	F-2200	1010101010	699999
13	4888888	55555	50000	PP-50	000000	04444	****
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00	511111111111111111111111111111111111111	0000	<b>ಎಎ</b> ಬ್ಬಾ	10 <del>4 4 4 4</del>	44000	60 60 60 60 60	00 00 01 01 01 01
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	52888844	25655	22222	120 120 120 120 120 120 120 120 120 120	25835 25835	155	255555 2655 2655 2655 2655 2655 2655 26

76

XXIV.-LAMBERT'S FORMULA.

		2888	58888	25555	28833	155 155 170 170	175 185 195 195 195 195 195 195 195 195 195 19	
	=8					884	231588	<b>1.8</b>
						333	344388	F. 28
	18					223	345888	1.9g
	7.75					3444	323888	7.3
	20 25					24233 4433	138882 138882 238882	252
	F. 87		_			24354	4488888	48 50
	F.9					43334	3888888	19
	F.#				49	43334	888888	7.3
	<b>■</b> □				4	33323	883388	
	1.9				34	33223	888288	#.Q
	8				33	33128	3333333	F. 88
	1.8				44	34458	######################################	
1	F. 55				433 343	34488	288888	7.55
	1.08				344	448888 448888	288888888888888888888888888888888888888	33.
	F.81	_			4995	448888	3333333 3333333 3333333	3.5
	185				3333	37.888.89	884488	26 28
	7.8				24432	988858	2522333 2522333	
	- St				33333	88388	88888	F. 83
•	#.8.1			9	43344	38288	838882	<b>=</b> .8
5	F. 22			45	23238	86888	***	= 20
	F.91			- 4	23258	88888	***	16
FORMULA.	===	_		32	34488	***	RESERVE BE	#. <u>41</u>
	101 101			545	34988	22222	885588	H. 52
	7.81		-	444	23885 33885 33885	85448	222223	= 9
. 0	181			444	448888	222222 222222	888888	1.0 90 90 90
Values of	7.8			\$23±	368888	84888	588888 588888	#.g
2 2	F8			4333	88388	*****	588888	
2 8	<b>#8</b>			22222	88288	*****	838855	
3	8			23328	22222	888888	888888	
	- 8			13118	88888	RRESS	ន្លង្គងន្លង	1 8
	- 55		- 15	33288	RESERVE	888888	888888	8
4	- 8		4	34688	88888	888888	888888	- 23
4	98	_	45	5 1 2 8 8 5 E E	88488	1000000	228888	8
	98		44	25 25 25 25 25 25 25 25 25 25 25 25 25 2	32232	288888	888888	88
	201		554	88888	888888	888888	882288	88
	83		434	28238	88288	88788	222222	627
	8		3555	86888	883588	888888	228888	
	80		35158	882838	88888	88883	288882	90
	120		4338	经路路路路	28888	28882	888888	192
	4		23288	28228	28888	88888	ងងម្ខងមន	4
	12	10	#358K	84888	88888	ន្លងន្លង	8822288	12
	028	445	20 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	988888	2622288	82228	855885	20
	89 99	4	388888 88888 88888	28222	822222	48888	1000001 000000 00000000000000000000000	88
	15	53	488888	888888	25555	228822	20 21 19 20 20 19 19 19 18 18 18	64 66
	8	43	38888	228822	88888	81812128	81198	62 6
	8	552	828338	58883	88888	1981118	21188877	8
	28	448	88888	82823	88888	13888	887778	
	281	348	28883	88588	ន្ធន្ងន្ងន	88668	866778	99
	透し	4448	84848	22222	88888	85558	112 112 112 112	1 3
	23	3488	*******	22822	ដូដ្ឋដូដ្ឋម	211822	129111111111111111111111111111111111111	22
	28	3388	****	22223	82883	18 17 17 16	555544	28
		1000	20202	82258	20202	28888	525555	

#### XXIV-XXX. WIND TABLES.

### TABLE XXV.-CONVERSION OF WIND VELOCITIES.

(Original)

1 mile per hour — . .4470+ metre per second. — 1.46867 foot " " — 1.6093+ kilometre per hour.

							<u></u> _				
Miles.	m.	ſt.	kil.	Miles.	m.	ft.	kil.	Miles.	m.	A.	kil.
0 .5 1.0 1.5 2.0 2.5	.0 .2 .4 .7 .9	.0 .7 1.5 2.2 2.9 3.7	.0 .8 1.6 2.4 3.2 4.0	26. 0 26. 5 27. 0 27. 5 28. 0 28. 5	11.6 11.8 12.1 12.3 12.5 12.7	38.1 38.9 39.6 40.3 41.1 41.8	41.8 42.6 43.5 44.3 45.1 45.9	52.0 52.5 58.0 58.5 54.0 54.5	23.2 23.5 23.7 23.9 24.1 24.4	76.3 77.0 77.7 78.5 79.2 79.9	83.7 84.5 85.3 86.1 86.9 87.7
8.0 8.5 4.0 4.5 5.0	1.3 1.6 1.8 2.0 2.2 2.5	4.4 5.1 5.9 6.6 7.3 8.1	4.8 5.6 6.4 7.2 8.0 8.9	29.0 29.5 80.0 80.5 81.0 81.5	13.0 13.2 13.4 13.6 13.9 14.1	42.5 43.3 44.0 44.7 45.5 46.2	46.7 47.5 48.3 49.1 49.9 50.7	55.0 55.5 56.0 56.5 57.0 57.5	24.6 24.8 25.0 25.3 25.5 25.7	80.7 81.4 82.1 82.9 83.6 84.3	88.5 89.3 90.1 90.9 91.7 92.5
6.0 6.5 7.0 7.5 8.0 8.5	2.7 2.9 3.1 3.4 3.6 3.8	8.8 9.5 10.3 11.0 11.7 12.5	9.7 10.5 11.3 12.1 12.9 13.7	82.0 82.5 88.0 88.5 84.0 84.5	14.3 14.5 14.8 15.0 15.2 15.4	46.9 47.7 48.4 49.1 49.9 50.6	51.5 52.3 53.1 53.9 54.7 55.5	58.0 58.5 59.0 59.5 60.0	25.9 26.2 26.4 26.6 26.8 27.0	85.1 85.8 86.5 87.3 88.0 88.7	93.3 94.1 95.0 95.8 96.6 97.4
9.0 9.5 10.0 10.5 11.0	4.0 4.2 4.5 4.7 4.9 5.1	13.2 13.9 14.7 15.4 16.1 •16.9	14.5 15.3 16.1 16.9 17.7 18.5	85.0 85.5 86.0 86.5 87.0 87.5	15.6 15.9 16.1 16.3 16.5 16.8	51.3 52.1 52.8 53.5 54.3 55.0	56.3 57.1 57.9 58.7 59.5 60.4	61. 0 61. 5 62. 0 62. 5 68. 0 68. 5	27.3 27.5 27.7 27.9 28.2 28.4	89.5 90.2 90.9 91.7 92.4 93.1	98.2 99.0 99.8 100.6 101.4 102.2
12.0 12.5 18.0 18.5 14.0 14.5	5.4 5.6 5.8 6.0 6.3 6.5	17.6 18.3 19.1 19.8 20.5 21.3	19.3 20.1 20.9 21.7 22.5 23.3	88.0 88.5 89.0 89.5 40.0 40.5	17.0 17.2 17.4 17.7 17.9 18.1	55.7 56.5 57.2 57.9 58.7 59.4	61.2 62.0 62.8 63.6 64.4 65.2	64. 0 64. 5 65. 0 65. 5 66. 0	28.6 28.8 29.1 29.3 29.5 29.7	93.9 94.6 95.3 96.1 96.8 97.5	103.0 103.8 104.6 105.4 106.2 107.0
15.0 15.5 16.0 16.5 17.0 17.5	6.7 6.9 7.2 7.4 7.6 7.8	22.0 22.7 23.5 24.2 24.9 25.7	24.1 24.9 25.7 26.6 27.4 28.2	41.0 41.5 42.0 42.5 48.0 48.5	18.3 18.6 18.8 19.0 19.2 19.4	60.1 60.9 61.6 62.3 63.1 63.8	66.0 66.8 67.6 68.4 69.2 70.0	67. 0 67. 5 68. 0 68. 5 69. 0 69. 5	30.0 30.2 30.4 30.6 30.8 31.1		
18. 0 18. 5 19. 0 19. 5 20. 0 20. 5	8.0 8.3 8.5 8.7 8.9 9.2	26.4 27.1 27.9 28.6 29.3 30.1	29.0 29.8 30.6 31.4 32.2 33.0	44.0 44.5 45.0 45.5 46.0 46.5	19.7 19.9 20.1 20.3 20.6 20.8	64.5 65.3 66.0 66.7 67.5 68.2	70.8 71.6 72.4 73.2 74.0 74.8	70.0 70.5 71.0 71.5 72.0 72.5	31.3 31.5 31.7 32.0 32.2 32.4	102.7 103.4 104.1 104.9 105.6 106.3	113.5 114.3 115. 1 115. 9
21.0 21.5 22.0 22.5 28.0 28.5	9.4 9.6 9.8 10.1 10.3 10.5	31.5	33.8 34.6 35.4 36.2 37.0 37.8	47.0 47.5 48.0 48.5 49.0 49.5	21.0 21.2 21.5 21.7 21.9 22.1	68.9 69.7 70.4 71.1 71.9 72.6	75.6 76.4 77.2 78.1 78.9 79.7	78.0 78.5 74.0 74.5 75.0 75.5	32.9	108.5	118.5 119.1
24.0 24.5 25.0 25.5	10.7 11.0 11.2 11.4 11.6	35.2 35.9 36.7 37.4 38.1	38.6 39.4 40.2 41.0 41.8	50.0 50.5 51.0 51.5 52.0	22.4 22.6 22.8 23.0 23.2	73.3 74.1 74.8 75.5 76.3	80.5 81.3 82.1 82.9 83.7	76.0 76.5 77.0 77.5 78.0	34.0 34.2 34.4 34.6 34.9		122.3 123.1 123.9 124.7 125.5

# XXIV-XXX. WIND TABLES.

TABLE XXVI.-CONVERSION OF WIND VELOCITIES.

(Original.)

1 metre per second — 2.236943 miles per hour.

.0	.1	.X.	.8	.4	.5	.6	.7	.8	.9
.0	.2	.4	.7	.9	1.1	1.3	1.6	1.8	2.0
2.2	2.5	2.7	2.9	3.1	3.4	3.6	3.8	4.0	4.3
4.5	4.7	4.9	5.1	5.4	5.6	5.8	6.0	6.3	6.5
6.7	6.9	7.2	7.4	7.6	7.8	8.1	8.3	8.5	8.7
8.9	9.2	9.4	9.6	9.8	10.1	10.3	10.5	10.7	11.0
11.2	11.4	11.6	11.9	12.1	12.3	12.5	12.8	13.0	13.2
13.4	13.6	13.9	14.1	14.3	14.5	14.8	15.0	15.2	15.4
15.7	15.9	16.1	16.3	16.6	16.8	17.0	17.2	17.4	17.7
17.9	18.1	18.3	18.6	18.8	19.0	19.2	19.5	19.7	19.7
20.1	20.4	20.6	20.8	21.0	21.3	21.5	21.7	21.9	22.1
22.4	22.6	22.8	23.0	23.3	23.5	23.7	23.9	24.2	24.4
24.6	24.8	25.1	25.3	25.5	25.7	25.9	26.2	26.4	26.6
26.8	27.1	27.3	27.5	27.7	28.0	28.2	28.4	28.6	28.9
29.1	29.3	29.5	29.8	30.0	30.2	30.4	30.6	30.9	31.1
31.3	31.5	31.8	32.0	32.2	32.4	32.7	32.9	33.1	33.3
33.6	33.8	34.0	34.2	34.4	34.7	34.9	35.1	35.3	35.6
35.8	36.0	36.2	36.5	36.7	36.9	37.1	37.4	37.6	37.8
38.0	38.3	38.5	38.7	38.9	39.1	39.4	39.6	39.8	40.0
40.3	40.5	40.7	40.9	41.2	41.4	41.6	41.8	42.1	42.3
42.5	42.7	42.9	•43.2	43.4	43.6	43.8	44.1	44.3	44.5
44.7	45.0	45.2	45.4	45.6	45.9	46.1	46.3	46.5	46.8
47.0	47.2	47.4	47.6	47.9	48.1	48.3	48.5	48.8	49.0
49.2	49.4	49.7	49.9	50.1	50.3	50.6	50.8	51.0	51.2
51.4	51.7	51.9	52.1	52.3	52.6	52.8	53.0	53.2	53.5
53.7	53.9	54.1	54.4	54.6	54.8	55.0	55.3	55.5	55.7
55.9	56.1	56.4	56.6	56.8	57.0	57.3	57.5	57.7	57.9
58.2	58.4	58.6	58.8	59.1	59.3	59.5	59.7	60.0	60.2
60.4	60.6	60.8	61.1	61.3	61.5	61.7	62.0	62.2	62.4
62.6	62.9	63.1	63.3	63.5	63.8	64.0	64.2	64.4	64.6
64.9	65.1	65.3	65.5	65.8	66.0	66.2	66.4	66.7	66.9
67.1 69.3 71.6 73.8 76.1	67.3 69.6 71.8 74.0 76.3	67.6 69.8 72.0 74.3 76.5	67.8 70.0 72.3 74.5 76.7	68.0 70.2 72.5 74.7 77.0	68.2 70.5 72.7 74.9 77.2	70.7 72.9 75.2 77.4	68.7 70.9 73.1 75.4 77.6	68.9 71.1 73.4 75.6 77.8	69:1 71:4 73:6 75:8 78:1
78.3	78.5	78.7	79.0	79.2	79.4	79.6	79.9	80.1	80.3
80.5	80.8	81.0	81.2	81.4	81.6	81.9	82.1	82.3	82.5
82.8	83.0	83.2	83.4	83.7	83.9	84.1	84.3	84.6	84.8
85.0	85.2	85.5	85.7	85.9	86.1	86.3	86.6	86.8	87.0
87.2	87.5	87.7	87.9	88.1	88.4	88.6	88.8	89.0	89.3
89.5 91.7 94.0 96.2 98.4	89.7 91.9 94.2 96.4 98.6	89.9 92.2 94.4 96.6 98.9	90.1 92.4 94.6 96.9 99.1	90.4 92.6 94.8 97.1 99.3	90.6 92.8 95.1 97.3 99.5	90.8 93.1 95.3 97.5 99.8	91.0 93.3 95.5 97.8	91.3 93.5 95.7 98.0	91.5 93.7 96.0 98.2

#### TABLE XXVII.

CONVERSION OF WIND VELOCITY IN MILES PER HOUR TO PRESSURE IN POUNDS PER SQUARE FOOT.

#### INTRODUCTION.

In many investigations it is necessary to express the velocity of the wind in terms of the pressure, but the determination of this relation is difficult, and the problem has attracted the attention of physicists for a hundred years.

Of the various results, those of Rouse, quoted by Smeaton<sup>1</sup> seem most consistent with recent investigations<sup>2</sup>. The formula, as announced by Smeaton from Rouse's experiments, is:

 $p = .005 v^2 s$ , in which

p =the pressure in pounds;

v = the velocity in miles per hour;

s =the surface in square feet.

The table has been computed from this formula, s being taken as one square foot.

It will be understood that the table is strictly applicable only to surfaces of about one square foot, and for velocities from twenty to forty miles per hour.

<sup>1</sup>Phil. Trans., Lond., 1759, li, 165.

<sup>2</sup>Unwin, C. K. Encyc. Brit., 9 ed. Hydromechanics.

Hazen, H. A. Am. Journ. Sc., New Haven, 1887, xxxiv, 241.

TABLE XXVII.-MILES PER HOUR TO POUNDS PER SQUARE FOOT.

					V = V 200	` <i>p</i> .			·	
Miles.	0	1	2	8	4	5	6	7	8	9
0	0	0	0	0	.1	.1	.2	.2	.3	.4
10	.5	.6	.7	.8	1.0	1.1	1.3	1.4	1.6	1.8
20	2.0	2.2	2.4	2.6	2.9	3.1	3.4	3.6	3.9	4.2
80	4.5	4.8	5.1	5.4	5.8	6.1	6.5	6.8	7.2	7.6
40	8.0	8.4	8.8	9.2	9.7	10.1	10.6	11.0	11.5	12.0
50	12.5	13.0	13.5	14.0	14.6	15.1	15.7	16.2	16.8	17.4
60	18.0	18.6	19.2	19.8	20.5	21.1	21.8	22.4	23.1	23.8
70	24.5	25.2	25.9	26.6	27.4	28.1	28.9	29.6	30.4	31.2
80	32.0	32.8	33.6	34.4	35.3	36.1	37.0	37.8	38.7	39.6
90	40.5	41.4	42.3	43.2	44.2	45.1	46.1	47.0	48.0	49.0

#### XXIV-XXX. WIND TABLES.

#### TABLE XXVIII.-BEAUFORT SCALE INTO MILES PER HOUR.

(Scott. Element. Met. p. 159.)

Force.	Beaufort Scale.	Miles.
0	Calm	3
1	Light air	8
2	Light breeze	13
3	Gentle "	18
4	Moderate "	23
5	Fresh "	28
6	Strong "	34
7	Moderate gale	40
8	Fresh "	48
9	Strong "	56
10	Whole "	65
11	Storm	75
12	Hurricane	90

#### TABLE XXIX.-ESTIMATION OF WIND VELOCITY.

(Original. Adopted by Signal Service.)

- 0. Calm.
- 1. Light; just moving the leaves of trees.
- 2. Moderate; moving branches.
- 3. Brisk; swaying branches, blowing up dust.
- 4. High; blowing up twigs from the ground, swaying whole trees.
- 5. Gale; breaking small branches, loosening bricks on chimneys.
- 6. Hurricane or tornado; destroying everything in its path.

#### TABLE XXX.-ESTIMATION OF THUNDER-STORM INTENSITY.

(Original. Adopted by Signal Service.)

- 1. Distant lightning.
- 2. Distant thunder.
- 3. Moderate thunder-storm.
- 4. Heavy thunder-storm.
- 5. Heavy thunder with very high wind breaking small branches off sees, etc.
  - 6. Thunder with hurricane or tornado.

#### TABLE XXXI.-INCHES TO MILLIMETRES.

1 inch — 25.3999 mm. (Original.)

In.	.00	.01	.02	.08	.04	.05	.06	.07	.08	.00
<del></del>										
0.0	0	.25	.51	.76	1.02	1.27	1.52	1.78	2.03	2.29
0.1 0.2	$2.54 \\ 5.08$	$\frac{2.79}{5.33}$	$\frac{3.05}{5.59}$	$\frac{3.30}{5.84}$	3.56 6.10	$\begin{array}{c} 3.81 \\ 6.35 \end{array}$	4.06 6.60	4.32 6.86	4.57 7.11	4.83 7.37
0.8	7.62	7.87	8.13	8.38	8.64	8.89	9.14	9.40	9.65	9.91
0.4	10.16	10.41	10.67	10.92	11.18	11.43	11.68	11.94	12.19	12.45
0.5	12.70	12.95	13.21	13.46	13.72	13.97	14.22	14.48	14.73	14.99
0.6 0.7	15.24 $17.78$	15.49 18.03	$15.75 \\ 18.29$	$16.00 \\ 18.54$	16.26 18.80	$16.51 \\ 19.05$	16.76 19.30	17.02 19.56	17.27 19.81	17.53 20.07
0.8	20.32	20.57	20.83	21.08	21.34	21.59	21.84	22.10	22.35	22.6
0.9	22.86	23.11	23.37	23.62	23.88	24.13	24.38	24.64	24.89	25.1
1.0	25.40	25.65	25.91	26.16	26.42	26.67	26.92	27.18	27.43	27.6
1.1 1.2	27.94 30.48	28.19 $30.73$	28.45 30.99	$28.70 \\ 31.24$	$28.96 \\ 31.50$	$29.21 \\ 31.75$	$29.46 \\ 32.00$	$29.72 \\ 32.26$	29.97 32.51	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
1.8	33.02	33.27	33.53	33.78	34.04	34.29	34.54	34.80	35.05	35.3
1.4	35.56	35.81	36.07	36.32	36.58	36.83	37.08	37.34	37.59	37.8
1.5 1.6	38.10	38.35	38.61	38.86	39.12	39.37	39.62	39.88	40.13	40.3
1.6	40.64 43.18	40.89 43.43	$41.15 \\ 43.69$	41.40 43.94	$41.66 \\ 44.20$	41.91 $44.45$	42.16 44.70	42.42 44.96	42.67 45.21	42.9 45.4
1.8	45.72	45.97	46.23	46.48	46.74	46.99	47.24	47.50	47.75	48.0
1.9	48.26	48.51	48.77	49.02	49.28	49.53	49.78	50.04	50.29	50.5
2.0	50.80	51.05	51.31	51.56	51.82	52.07	52.32	52.58	52.83	53.0
2. 1 2. 2	53.34 55.88	53.59 56.13	53.85 56.39	54.10 56.64	$54.36 \\ 56.90$	54.61 57.15	54.86 57.40	55.12 57.66	55.37 57.91	55.6 58.1
2.3	58.42	58.67	58.93	59.18	59.44	59.69	59.94	60.20	60.45	60.7
2.4	60.96	61.21	61.47	61.72	61.98	62.23	62.48	62.74	62.99	63.2
2.5	63.50	63.75	64.01	64.26	64.52	64.77	65.02	65.28	65.53	65.7
2.6 2.7	66.04 68.58	66.29 68.83	66.55 69.09	66.80 69.34	67.06 69.60	67.31 69.85	67.56	67.82 70.36	68.07 70.61	68.3 70.8
2.8	71.12	71.37	71.63	71.88	72.14	72.39	72.64	72.90	73.15	73.4
2.9	73.66	73.91	74.17	74.42	74.68	74.93	75.18	75.44	75.69	75.9
8.0	76.20	76.45	76.71	76.96	77.22	77.47	77.72	77.98	78.23	78.4
8. 1 8. 2	78.74 81.28	$78.99 \\ 81.53$	$79.25 \\ 81.79$	$79.50 \\ 82.04$	$79.76 \\ 82.30$	$80.01 \\ 82.55$	80.26 82.80	80.52 83.06	80.77 83.31	81.0 83.5
3.3	83.82	84.07	84.33	84.58	84.84	85.09	85.34	85.60	85.85	86.1
8.4	86.36	86.61	86.87	87.12	87.38	87.63	87.88	88.14	88.39	88.6
8.5	88.90	89.15	89.41	89.66	89.92	90.17	90.42	90.68	90.93	91.1
3.6 3.7	91.44 93.98	$91.69 \\ 94.23$	$91.95 \\ 94.49$	$92.20 \\ 94.74$	$92.46 \\ 95.00$	$92.71 \\ 95.25$	92.96 95.50	93.22 95.76	93.47 96.01	93.7 96.2
3.8	96.52	96.77	97.03	97.28	97.54	97.79	98.04	98.30	98.55	98.8
8.9	99.06	99.31	99.57	99.82	100.08	100.33	100.58	100.84	101.09	101.8
4.0	101.60	101.85	102.11	102.36	102.62	102.87	103.12	103.38	103.63	103.8
4.1 4.2	104.14 106.68	$104.39 \\ 106.93$	104.65 107.19	104.90 $107.44$	105.16 107.70	105.41 $107.95$	$105.66 \\ 108.20$	105.92   108.46	106.17 108.71	106.4 108.9
4.3	109.22	109.47	109.73	109.98	110.24	110.49	110.74		111.25	111,5
4.4	111.76	112.01	112.27	112.52		113.03	113.28	113.54	113.79	114.0
4.5	114.30	114.55	114.81	115.06	115.32	115.57	115.82	116.08	116.33	116.5
4.6 4.7	116.84 119.38	117.09 119.63	117.35 119.89	117.60 $120.14$	117.86 $120.40$	$118.11 \\ 120.65$	118.36 120.90	118.62 $121.16$	118.87 121.41	$  119.1 \\   121.6$
4.8	121.92	122.17	122.43	122.68	122.94	123.19	123.44	123.70	123.95	124.2
4.9	124.46	124.71	124.97	125.22	125.48	125.73	125.98	126.24	126.49	126.7
5.0	127.00	127.25	127.51	127.76	128.02	128.27	128.52	128.78	129.03	129.2

XXXI.—INCHES TO MILLIMETRES.

In.	.00	.01	.02	.08	.04	.05	.06	.07	.08	.00
5. 0	127.00	127.25	127.51	127.76	128.02	128.27	128.52	128.78	129.03	129.29
5. 1	129.54	129.79	130.05	130.30	130.56	130.81	131.06	131.32	131.57	131.83
5. 2	132.08	132.33	132.59	132.84	133.10	133.35	133.60	133.86	134.11	134.37
5. 3	134.62	134.87	135.13	135.38	135.64	135.89	136.14	136.40	136.65	136.91
5. 4	137.16	137.41	137.67	137.92	138.18	138.43	138.68	138.94	139.19	139.45
5. 5 5. 7 5. 8 5. 9	139.70 142.24 144.78 147.32 149.86	139.95 142.49 145.03 147.57 150.11	140.21 142.75 145.29 147.83 150.37	140.46 143.00 145.54 148.08 150.62	140.72 143.26 145.80 148.34 150.88	146.05	141.22 143.76 146.30 148.84 151.38	141.48 144.02 146.56 149.10 151.64	141.73 144.27 146.81 149.35 151.89	141.99 144.53 147.07 149.61 152.15
6. 0	152.40	152.65	152.91	153.16	153.42	158.75	153.92	154.18	154.43	154.69
6. 1	154.94	155.19	155.45	155.70	155.96		156.46	156.72	156.97	157.23
6. 2	157.48	157.73	157.99	158.24	158.50		159.00	159.26	159.51	159.77
6. 8	160.02	160.27	160.53	160.78	161.04		161.54	161.80	162.05	162.31
6. 4	162.56	162.81	163.07	163.32	163.58		164.08	164.34	164.59	164.85
6. 5	165.10	165.35	165.61	165.86	166.12	$171.45 \\ 173.99$	166.62	166.88	167.13	167.39
6. 6	167.64	167.89	168.15	168.40	168.66		169.16	169.42	169.67	169.93
6. 7	170.18	170.43	170.69	170.94	171.20		171.70	171.96	172.21	172.47
6. 8	172.72	172.97	173.23	173.48	173.74		174.24	174.50	174.75	175.01
6. 9	175.26	175.51	175.77	176.02	176.28		176.78	177.04	177.29	177.55
7.0 7.1 7.2 7.8 7.4	177.80 180.34 182.88 185.42 187.96	178.05 180.59 183.13 185.67 188.21	178.31 180.85 183.39 185.93 188.47	178.56 181.10 183.64 186.18 188.72	178.82 181.36 183.90 186.44 188.98	184.15 186.69	179.32 181.86 184.40 186.94 189.48	179.58 182.12 184.66 187.20 189.74	179.83 182.37 184.91 187.45 189.99	180.09 182.63 185.17 187.71 190.25
7.5	190.50	190.75	191.01	191.26	191.52	196.85 $199.39$	192.02	192.28	192.53	192.79
7.6	193.04	193.29	193.55	193.80	194.06		194.56	194.82	195.07	195.33
7.7	195.58	195.83	196.09	196.34	196.60		197.10	197.36	197.61	197.87
7.8	198.12	198.37	198.63	198.88	199.14		199.64	199.90	200.15	200.41
7.9	200.66	200.91	201.17	201.42	201.68		202.18	202.44	202.69	202.95
8.0	203.20	203.45	203.71	203.96	204.22		204.72	204.98	205.23	205.49
8.1	205.74	205.99	206.25	206.50	206.76		207.26	207.52	207.77	208.03
8.2	208.28	208.53	208.79	209.04	209.30		209.80	210.06	210.31	210.57
8.3	210.82	211.07	211.33	211.58	211.84		212.34	212.60	212.85	213.11
8.4	213.36	213.61	213.87	214.12	214.38		214.88	215.14	215.39	215.65
8.5	215.90	216.15	216.41	216.66	216.92	217.17	217.42	217.68	217.93	218.19
8.6	218.44	218.69	218.95	219.20	219.46	219.71	219.96	220.22	220.47	220.73
8.7	220.98	221.23	221.49	221.74	222.00	222.25	222.50	222.76	223.01	223.27
8.8	223.52	223.77	224.03	224.28	224.54	224.79	225.04	225.30	225.55	225.81
8.9	226.06	226.31	226.57	226.82	227.08	227.33	227.58	227.84	228.09	228.35
9.0	228.60	228.85	229.11	229.36	229.62	234.95	230.12	230.38	230.63	230.89
9.1	231.14	231.39	231.65	231.90	232.16		232.66	232.92	233.17	233.43
9.2	233.68	233.93	234.19	234.44	234.70		235.20	235.46	235.71	235.97
9.8	236.22	236.47	236.73	236.98	237.24		237.74	238.00	238.25	238.51
9.4	238.76	239.01	239.27	239.52	239.78		240.28	240.54	240.79	241.05
9.5 9.6 9.7 9.8 9.9 LO.0	241.30 243.84 246.38 248.92 251.46 254.00	241.55 244.09 246.63 249.17 251.71 254.25	241.81 244.35 246.89 249.43 251.97 254.51	242.06 244.60 247.14 249.68 252.22 254.76	242.32 244.86 247.40 249.94 252.48 255.01	250.19 $252.73$	242.82 245.36 247.90 250.44 252.98 255.52	243.08 245.62 248.16 250.70 253.24 255.78	243.33 245.87 248.41 250.95 253.49 258.08	243.59 246.13 248.67 251.21 253.

#### XXXI.-INCHES TO MILLIMETRES.

In.	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
10.0	254.00	254.25	254.51	254.76	255.01	$257.81 \\ 260.35$	255.52	255.78	256.03	256.28
10.1	256.54	256.79	257.05	257.30	257.55		258.06	258.32	258.57	258.82
10.2	259.08	259.33	259.59	259.84	260.09		260.60	260.86	261.11	261.36
10.3	261.62	261.87	262.13	262.38	262.63		263.14	263.40	263.65	263.90
10.4	264.16	264.41	264.67	264.92	265.17		265.68	265.94	266.19	266.44
10.5 10.6 10.7 10.8 10.9	266.70 269.24 271.78 274.32 276.86	266.95 269.49 272.03 274.57 277.11	267.21 269.75 272.29 274.83 277.37	267.46 270.00 272.54 275.08 277.62	267.71 270.25 272.79 275.33 277.87		268.22 270.76 273.30 275.84 278.38	$\begin{array}{c} 268.48 \\ 271.02 \\ 273.56 \\ 276.10 \\ 278.64 \end{array}$	268.73 271.27 273.81 276.35 278.89	268.98 271.52 274.06 276.60 279.14
11.0	279.40	279.65	279.91	280.16	280.41		280.92	281.18	281.43	281.68
11.1	281.94	282.19	282.45	282.70	282.95		283.46	283.72	283.97	284.22
11.2	284.48	284.73	284.99	285.24	285.49		286.00	286.26	286.51	286.76
11.3	287.02	287.27	287.53	287.78	288.03		288.54	288.80	289.05	289.30
11.4	289.56	289.81	290.07	290.32	290.57		291.08	291.34	291.59	291.84
11.5	292.10	292.35	292.61	292.86	293.11	293.37	293.62	$\begin{array}{c} 293.88 \\ 296.42 \\ 298.96 \\ 301.50 \\ 304.04 \end{array}$	294.13	294.38
11.6	294.64	294.89	295.15	295.40	295.65	295.91	296.16		296.67	296.92
11.7	297.18	297.43	297.69	297.94	298.19	298.45	298.70		299.21	299.46
11.8	299.72	299.97	300.23	300.48	300.73	300.99	301.24		301.75	302.00
11.9	302.26	302.51	302.77	303.02	303.27	303.53	303.78		304.29	304.54
12.0	304.80	305.05	305.31	305.56	305.81	306.07	306.32	306.58	306.83	307.08
12.1	307.34	307.59	307.85	308.10	308.35	308.61	308.86	309.12	309.37	309.62
12.2	309.88	310.13	310.39	310.64	310.89	311.15	311.40	311.66	311.91	312.16
12.3	312.42	312.67	312.93	313.18	313.43	313.69	313.94	314.20	314.45	314.70
12.4	314.96	315.21	315.47	315.72	315.97	316.23	316.48	316.74	316.99	317.24
12.5	317.50	317.75	318.01	318.26	318.51	$321.31 \\ 323.85 \\ 326.39$	319.02	319.28	319.53	319.78
12.6	320.04	320.29	320.55	320.80	321.05		321.56	321.82	322.07	322.32
12.7	322.58	322.83	323.09	323.34	323.59		324.10	324.36	324.61	324.86
12.8	325.12	325.37	325.63	325.88	326.13		326.64	326.90	327.15	327.40
12.9	327.66	327.91	328.17	328.42	328.67		329.18	329.44	329.69	329.94
13.0	330.20	330.45	330.71	330.96	331.21	339.09	331.72	331.98	332.23	332.48
13.1	332.74	332.99	333.25	333.50	333.75		334.26	334.52	334.77	335.02
13.2	335.28	335.53	335.79	336.04	336.29		336.80	337.06	337.31	337.56
13.3	337.82	338.07	338.33	338.58	338.83		339.34	339.60	339.85	340.10
13.4	340.36	340.61	340.87	341.12	341.37		341.88	342.14	342.39	342.64
13.5	342.90	343.15	343.41	343.66	343.91	$346.71 \\ 349.25 \\ 351.79$	344.42	344.68	344.93	345.18
13.6	345.44	345.69	345.95	346.20	346.45		346.96	347.22	347.47	347.72
13.7	347.98	348.23	348.49	348.74	348.99		349.50	349.76	350.01	350.26
13.8	350.52	350.77	351.03	351.28	351.53		352.04	352.30	352.55	352.80
13.9	353.06	353.31	353.57	353.82	354.07		354.58	354.84	355.09	355.34
14.0 14.1 14.2 14.3 14.4		355.85 358.39 360.93 363.47 366.01	356.11 358.65 361.19 363.73 366.27	356.36 358.90 361.44 363.98 366.52	359.15	356.87 359.41 361.95 364.49 367.03	\$57.12 359.66 362.20 364.74 367.28	357.38 359.92 362.46 365.00 367.54	357.63 360.17 362.71 365.25 367.79	357.88 360.42 362.96 365.50 368.04
14.5 14.6 14.7 14.8 14.9 15.0	368.30 370.84 373.38 375.92 378.46 381.00	368.55 371.09 373.63 376.17 378.71 381.25	368.81 371.35 373.89 376.43 378.97 381.51	369.06 371.60 374.14 376.68 379.22 381.76		$372.11 \\ 374.65$	369.82 372.36 374.90 377.44 379.98 382.52	370.08 372.62 375.16 377.70 380.24 382.78	370.33 372.87 375.41 377.95 380.49 383.03	370.58 373.15 375.66 378.20 380.74 383.28

XXXI.-INCHES TO MILLIMETRES.

	1									
In.	.00	.01	.02	.08	.04	.05	.06	.07	.08	.09
15.0	381.00	381.25	381.51	381.76	382.01	382.27	382.52	382.78	383.03	383.28
15.1	383.54	383.79	384.05	384.30	384.55	384.81	385.06	385.32	385.57	385.82
15.2	386.08	386.33	386.59	386.84	387.09	387.35	387.60	387.86	388.11	388.36
15.8	388.62	388.87	389.13	389.38	389.63	389.89	390.14	390.40	390.65	390.90
15.4	391.16	391.41	391.67	391.92	392.17	392.43	392.68	392.94	393.19	393.44
15.5	393.70	393.95	394.21	394.46	394.71	394.97	395.22	395.48	395.73	395.98
15.6	396.24	396.49	396.75	397.00	397.25	397.51	397.76	398.02	398.27	398.52
15.7	398.78	399.03	399.29	399.54	399.79	400.05	400.30	400.56	400.81	401.06
15.8	401.32	401.57	401.83	402.08	402.33	402.59	402.84	403.10	403.35	403.60
15.9	403.86	404.11	404.37	404.62	404.87	405.13	405.38	405.64	405.89	406.14
16.0	406.40	406.65	406.91	407.16	407.41	407.67	407.92	408.18	408.43	408.68
16.1	408.94	409.19	409.45	409.70	409.95	410.21	410.46	410.72	410.97	411.22
16.2	411.48	411.73	411.99	412.24	412.49	412.75	413.00	413.26	413.51	413.76
16.8	414.02	414.27	414.53	414.78	415.03	415.29	415.54	415.80	416.05	416.30
16.4	416.56	416.81	417.07	417.32	417.57	417.83	418.08	418.34	418.59	418.84
16.5	419.10	419.35	419.61	419.86	420.11	420.37	420.62	420.88	421.13	421.38
16.6	421.64	421.89	422.15	422.40	422.65	422.91	423.16	423.42	423.67	423.92
16.7	424.18	424.43	424.69	424.94	425.19	425.45	425.70	425.96	426.21	426.46
16.8	426.72	426.97	427.23	427.48	427.73	427.99	428.24	428.50	428.75	429.00
16.9	429.26	429.51	429.77	430.02	430.27	430.53	430.78	431.04	431.29	431.54
17.0	431.80	432.05	432.31	432.56	432.81	433.07	433.32	433.58	433.83	434.08
17.1	434.34	434.59	434.85	435.10	435.35	435.61	435.86	436.12	436.37	436.62
17.2	436.88	437.13	437.39	437.64	437.89	438.15	438.40	438.66	438.91	439.16
17.8	439.42	439.67	439.93	440.18	440.43	440.69	440.94	441.20	441.45	441.70
17.4	441.96	442.21	442.47	442.72	442.97	443.23	443.48	443.74	443.99	444.24
17.5	444.50	444.75	445.01	445.26	445.51	445.77	446.02	446.28	446.53	446.78
17.6	447.04	447.29	447.55	447.80	448.05	448.31	448.56	448.82	449.07	449.32
17.7	449.58	449.83	450.09	450.34	450.59	450.85	451.10	451.36	451.61	451.86
17.8	452.12	452.37	452.63	452.88	453.13	453.39	453.64	453.90	454.15	454.40
17.9	454.66	454.91	455.17	455.42	455.67	455.93	456.18	456.44	456.69	456.94
18.0	457.20	457.45	457.71	457.96	458.21	458.47	458.72	458.98	459.23	459.48
18.1	459.74	459.99	460.25	460.50	460.75	461.01	461.26	461.52	461.77	462.02
18.2	462.28	462.53	462.79	463.04	463.29	463.55	463.80	464.06	464.31	464.56
18.8	464.82	465.07	465.33	465.58	465.83	466.09	466.34	466.60	466.85	467.10
18.4	467.36	467.61	467.87	468.12	468.37	468.63	468.88	469.14	469.39	469.64
18.5	469.90	470.15	470.41	470.66	470.91	471.17	471.42	471.68	471.93	472.18
18.6	472.44	472.69	472.95	473.20	473.45	473.71	473.96	474.22	474.47	474.72
18.7	474.98	475.23	475.49	475.74	475.99	476.25	476.50	476.76	477.01	477.26
18.8	477.52	477.77	478.03	478.28	478.53	478.79	479.04	479.30	479.55	479.80
18.9	480.06	480.31	480.57	480.82	481.07	481.33	481.58	481.84	482.09	482.34
19.0	482.60	482.85	483.11	483.36	483.61	483.87	484.12	484.38	484.63	484.88
19.1	485.14	485.39	485.65	485.90	486.15	486.41	486.66	486.92	487.17	487.42
19.2	487.68	487.93	488.19	488.44	488.69	488.95	489.20	489.46	489.71	489.96
19.8	490.22	490.47	490.73	490.98	491.23	491.49	491.74	492.00	492.25	492.50
19.4	492.76	493.01	493.27	493.52	493.77	494.03	494.28	494.54	494.79	495.04
19.5 19.6 19.7 19.8 19.9 20.0	495.30 497.84 500.38 502.92 505.46 508.00	495.55 498.09 500.63 503.17 505.71 508.25	495.81 498.35 500.89 503.43 505.97 508.51	496.06 498.60 501.14 503.68 506.22 508.76	496.31 498.85 501.39 503.93 506.47 509.01	496.57 499.11 501.65 504.19 506.73 509.27	496.82 499.36 501.90 504.44 506.98 509.52	497.08 499.62 502.16 <b>£</b> 04.70 507.24 509.78		497.58 500.12 502.66 505
				<u></u>	L	<b>I</b>	7	<u> </u>		<u> </u>

XXXI.-INCHES TO MILLIMETRES.

In.	.00	.01	.02	.08	.04	.05	.06	.07	.08	.09
20. 0 20. 1 20. 2 20. 8 20. 4	508.00 510.54 513.08 515.62 518.16	508.25 510.79 513.33 515.87 518.41	508.51 511.05 513.59 516.13 518.67	508.76 511.30 513.84 516.38 518.92	509.01 511.55 514.09 516.63 519.17	509.27 511.81 514.35 516.89 519.43	509.52 512.06 514.60 517.14 519.68	509.78 512.32 514.86 517.40 519.94	510.03 512.57 515.11 517.65 520.19	510.28 512.82 515.36 517.90 520.44
20.5 20.6 20.7 20.8 20.9	520.70 523.24 525.78 528.32 530.86	520.95 523.49 526.03 528.57 531.11	521.21 523.75 526.29 528.83 531.37	521.46 524.00 526.54 529.08 531.62	521.71 524.25 526.79 529.33 531.87	521.97 524.51 527.05 529.59 532.13	522.22 524.76 527.30 529.84 532.38	522.48 525.02 527.56 530.10 532.64	522.73 525.27 527.81 530.35 532.89	522.98 525.52 528.06 530.60 533.14
21.0 21.1 21.2 21.8 21.4	533.40 535.94 538.48 541.02 543.56	533.65 536.19 538.73 541.27 543.81	533.91 536.45 538.99 541.53 544.07	534.16 536.70 539.24 541.78 544.32	534.41 536.95 539.49 542.03 544.57	534.67 537.21 539.75 542.29 544.83	534.92 537.46 540.00 542.54 545.08	535.18 537.72 540.26 542.80 545.34	535.43 537.97 540.51 543.05 545.59	535.68 538.22 540.76 543.30 545.84
21.5 21.6 21.7 21.8 21.9	546.10 548.64 551.18 553.72 556.26	546.35 548.89 551.43 553.97 556.51	546.61 549.15 551.69 554.23 556.77	546.86 549.40 551.94 554.48 557.02	547.11 549.65 552.19 554.73 557.27	547.37 549.91 552.45 554.99 557.53	547.62 550.16 552.70 555.24 557.78	547.88 550.42 552.96 555.50 558.04	548.13 550.67 553.21 555.75 558.29	548.38 550.92 553.46 556.00 558.54
22.0 22.1 22.2 22.8 22.4	558.80 561.34 563.88 566.42 568.96	561.59 564.13 566.67 569.21	559.31 561.85 564.39 566.93 569.47	559.56 562.10 564.64 567.18 569.72		560.07 562.61 565.15 567.69 570.23	560.32 562.86 565.40 567.94 570.48	560.58 563.12 565.66 568.20 570.74	560.83 563.37 565.91 568.45 570.99	561.08 563.62 566.16 568.70 571.24
22.5 22.6 22.7 22.8 22.9	571.50 574.04 576.58 579.12 581.66	574.29 576.83 579.37 581.91	574.55 577.09 579.63 582.17	572.26 574.80 577.34 579.88 582.42	575.05 577.59 580.13 582.67	572.77 575.31 577.85 580.39 582.93	573.02 575.56 578.10 580.64 583.18	573.28 575.82 578.36 580.90 583.44	573.53 576.07 578.61 581.15 583.69	573.78 576.32 578.86 581.40 583.94
28. 0 28. 1 28. 2 28. 8 28. 4	584.20 586.74 589.28 591.82 594.36	586.99 589.53 592.07 594.61	587.25 589.79 592.33 594.87	595.12	587.75 590.29 592.83 595.37	585.47 588.01 590.55 593.09 595.63	585.72 588.26 590.80 593.34 595.88	585.98 588.52 591.06 593.60 596.14	586.23 588.77 591.31 593.85 596.39	586.48 586.02 591.56 594.10 596.64
28.5 28.6 28.7 28.8 28.9	596.90 599.44 601.98 604.52 607.06	599.69 602.23 604.77 607.31	599.95 602.49 605.03 607.57	602.74 605.28 607.82	600.45 602.99 605.53 608.07	603.25 605.79 608.33		598.68 601.22 603.76 606.30 608.84	598.93 601.47 604.01 606.55 609.09	599.18 601.72 604.26 606.80 609.34
24.0 24.1 24.2 24.8 24.4 24.5	614.68 617.22 619.76	612.39 614.93 617.47 620.01	612.65 615.19 617.73 620.27	612.90 615.44 617.98 620.52	613.15 615.69 618.23 620.77	613.41 615.95 618.49 621.03	616.20 618.74 621.28	616.46 619.00 621.54	614.17 616.71 619.25 621.79	616.9 <b>6</b> 619.5 <b>0</b> 622.0 <b>4</b>
24. 6 24. 7 24. 8 24. 9 25. 0	624.84 627.38 629.92 632.46	625.09 627.63 630.17 632.71	625.35 627.89 630.43 632.97	625.60 628.14 630.68 633.22	625.85 628.39 630.93 633.47	628.65 631.19 633.73	626.36 628.90 631.44 633.98	626.62 629.16 631.70 634.24	626.87 629.41 631.95 634.49	624.58 627.12 629.66 632.20 634.74 637.28

#### XXXI.-INCHES TO MILLIMETRES.

In.	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
25.0	635.00	635.25	635.51	635.76	636.01	636.27	636.52	636.78	637.03	637.28
25.1	637.54	637.79	638.05	638.30	638.55	638.81	639.06	639.32	639.57	639.82
25.2	640.08	640.33	640.59	640.84	641.09	641.35	641.60	641.86	642.11	642.36
25.3	642.62	642.87	643.13	643.38	643.63	643.89	644.14	644.40	644.65	644.90
25.4	645.16	645.41	645.67	645.92	646.17	646.43	646.68	646.94	647.19	647.44
25.5	647.70	647.95	648.21	648.46	648.71	648.97	649.22	649.48	649.73	649.98
25.6	650.24	650.49	650.75	651.00	651.25	651.51	651.76	652.02	652.27	652.52
25.7	652.78	653.03	653.29	653.54	653.79	654.05	654.30	654.56	654.81	655.06
25.8	655.32	655.57	655.83	656.08	656.33	656.59	656.84	657.10	657.35	657.60
25.9	657.86	658.11	658.37	658.62	658.87	659.13	659.38	659.64	659.89	660.14
26. 0	660.40	660.65	660.91	661.16	661.41	661.67	661.92	662.18	662.43	662.68
26. 1	662.94	663.19	663.45	663.70	663.95	664.21	664.46	664.72	664.97	665.22
26. 2	665.48	665.73	665.99	666.24	666.49	666.75	667.00	667.26	667.51	667.76
26. 8	668.02	668.27	668.53	668.78	669.03	669.29	669.54	669.80	670.05	670.30
26. 4	670.56	670.81	671.07	671.32	671.57	671.83	672.08	672.34	672.59	672.84
26. 5	673.10	673.35	673.61	673.86	674.11	674.37	674.62	674.88	675.13	675.38
26. 6	675.64	675.89	676.15	676.40	676.65	676.91	677.16	677.42	677.67	677.92
26. 7	678.18	678.43	678.69	678.94	679.19	679.45	679.70	679.96	680.21	680.46
26. 8	680.72	680.97	681.23	681.48	681.73	681.99	682.24	682.50	682.75	683.00
26. 9	683.26	683.51	683.77	684.02	684.27	684.53	684.78	685.04	685.29	685.54
27. 0	685.80	686.05	686.31	686.56	686.81	687.07	687.32	687.58	687.83	688.08
27. 1	688.34	688.59	688.85	689.10	689.35	689.61	689.86	690.12	690.37	690.62
27. 2	690.88	691.13	691.39	691.64	691.89	692.15	692.40	692.66	692.91	693.16
27. 8	693.42	693.67	693.93	694.18	694.43	694.69	694.94	695.20	695.45	695.70
27. 4	695.96	696.21	696.47	696.72	696.97	697.23	697.48	697.74	697.99	698.24
27.5	698.50	698.75	699.01	699.26	699.51	699.77	700.02	700.28	700.53	700.78
27.6	701.04	701.29	701.55	701.80	702.05	702.31	702.56	702.82	703.07	703.32
27.7	703.58	703.83	704.09	704.34	704.59	704.85	705.10	705.36	705.61	705.86
27.8	706.12	706.37	706.63	706.88	707.13	707.39	707.64	707.90	708.15	708.40
27.9	708.66	708.91	709.17	709.42	709.67	709.93	710.18	710.44	710.69	710.94
28.0	711.20	711.45	711.71	711.96	712.21	712.47	712.72	712.98	713.23	713.48
28.1	713.74	713.99	714.25	714.50	714.75	715.01	715.26	715.52	715.77	716.02
28.2	716.28	716.53	716.79	717.04	717.29	717.55	717.80	718.06	718.31	718.56
28.3	718.82	719.07	719.33	719.58	719.83	720.09	720.34	720.60	720.85	721.10
28.4	721.36	721.61	721.87	722.12	722.37	722.63	722.88	723.14	723.39	723.64
28.5	723.90	724.15	724.41	724.66	724.91	725.17	725.42	725.68	725.93	726.18
28.6	726.44	726.69	726.95	727.20	727.45	727.71	727.96	728.22	728.47	728.72
28.7	728.98	729.23	729.49	729.74	729.99	730.25	730.50	730.76	731.01	731.26
28.8	731.52	731.77	732.03	732.28	732.53	732.79	733.04	733.30	733.55	733.80
28.9	734.06	734.31	734.57	734.82	735.07	735.33	735.58	735.84	736.09	736.34
29.0	736.60	736.85	737.11	737.36	737.61	737.87	738.12	738.38	738.63	738.88
29.1	739.14	739.39	739.65	739.90	740.15	740.41	740.66	740.92	741.17	741.42
29.2	741.68	741.93	742.19	742.44	742.69	742.95	743.20	743.46	743.71	743.96
29.8	744.22	744.47	744.73	744.98	745.23	745.49	745.74	746.00	746.25	746.50
29.4	746.76	747.01	747.27	747.52	747.77	748.03	748.28	748.54	748.79	749.04
29.5 29.6 29.7 29.8 29.9 80.0	749.30 751.84 754.38 756.92 759.46 762.00	749.55 752.09 754.63 757.17 759.71 762.25	749.81 752.35 754.89 757.43 759.97 762.50	750.06 752.60 755.14 757.68 760.22 762.76	750.31 752.85 755.39 757.93 760.47 763.01	750.57 753.11 755.65 758.19 760.73 763.27	750.82 753.36 755.90 758.44 760.98 763.52		753.87 756.41 758.95 761.49	751.58 754.12 756.66 759.20

#### XXXI.-INCHES TO MILLIMETRES.

In.	.00	.01	.0%	.08	.04	.05	.06	.07	.08	.09
80.0	762.00	762.25	762.50	762.76	763.01	763.27	763.52	763.77	764.03	764.28
80.1	764.54	764.79	765.04	765.30	765.55	765.81	766.06	766.31	766.57	766.82
80.2	767.08	767.33	767.58	767.84	768.09	768.35	768.60	768.85	769.11	769.36
80.8	769.62	769.87	770.12	770.38	770.63	770.89	771.14	771.39	771.65	771.90
80.4	772.16	772.41	772.66	772.92	773.17	773.43	773.68	773.93	774.19	774.44
80. 5	774.70	774.95	775.20	775.46	775.71	775.97	776.22	776.47	776.73	776.98
80. 6	777.24	777.49	777.74	778.00	778.25	778.51	778.76	779.01	779.27	779.52
80. 7	779.78	780.03	780.28	780.54	780.79	781.05	781.30	781.55	781.81	782.06
80. 8	782.32	782.57	782.82	783.08	783.33	783.59	783.84	784.09	784.35	784.60
80. 9	784.86	785.11	785.36	785.62	785.87	786.13	786.38	786.63	786.89	787.14
81.0	787.40	787.65	787.90	788.16	788.41	788.67	788.92	789.17	789.43	789.68
81.1	789.94	790.19	790.44	790.70	790.95	791.21	791.46	791.71	791.97	792.22
81.2	792.48	792.73	792.98	793.24	793.49	793.75	794.00	794.25	794.51	794.76
81.8	795.02	795.27	795.52	795.78	796.03	796.29	796.54	796.79	797.05	797.30
81.4	797.56	797.81	798.06	798.32	798.57	798.83	799.08	799.33	799.59	799.84
81.5	800.10	800.35	800.60	800.86	801.11	801.37	801.62	801.87	802.13	802.38
81.6	802.64	802.89	803.14	803.40	803.65	803.91	804.16	804.41	804.67	804.92
81.7	805.18	805.43	805.68	805.94	806.19	806.45	806.70	806.95	807.21	807.46
81.8	807.72	807.97	808.22	808.48	808.73	808.99	809.24	809.49	809.75	810.00
81.9	810.26	810.51	810.76	811.02	811.27	811.53	811.78	812.03	812.29	812.54

# LINEAR MEASURES.

TABLE XXXII.

MILLIMETRES TO INCHES.

TABLE XXXII.-MILLIMETRES TO INCHES.

1 mm. —,0 393702 inch. (Original.)

402 15.87 .791 .795 .799 .803 .807 .811 .815 .819 402 15.827 .831 .835 .839 .843 .847 .850 .854 .888 404 15.906 .909 .913 .917 .921 .925 .929 .933 .937 .840 15.986 .870 .874 .878 .882 .886 .890 .894 .898 .894 404 15.906 .909 .913 .917 .921 .925 .929 .933 .937 .806 .806 .807 .811 .815 .819 .808 .806 .809 .894 .898 .806 .809 .894 .898 .806 .806 .806 .806 .806 .806 .806 .80	n	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
401 15.787	15.	.748	15.752	15.756	15.760	15.764	15.768	15.779	15.776	15 780	15.784
402 15.827 .831 .835 .839 .843 .847 .850 .854 .858 404 15.906 .909 .913 .917 .921 .925 .929 .928 .894 .898 .894 404 15.906 .909 .913 .917 .921 .925 .929 .928 .933 .937 .405 .15.945 .15.949 .15.953 .15.957 .15.961 .15.965 .15.969 .15.972 .15.976 .1406 .15.984 .15.988 .15.992 .15.996 .16.000 .16.004 .16.008 .16.012 .16.016 .1407 .16.024 .16.028 .16.035 .039 .043 .047 .051 .055 .059 .048 .16.063 .067 .071 .075 .079 .083 .087 .091 .095 .1409 .16.102 .106 .110 .114 .118 .122 .126 .130 .134 .111 .155 .189 .193 .197 .201 .205 .209 .213 .141 .16.181 .185 .189 .193 .197 .201 .205 .209 .213 .141 .16.260 .294 .228 .232 .236 .240 .244 .248 .252 .141 .16.299 .303 .307 .311 .315 .319 .323 .327 .331 .1415 .16.299 .303 .307 .311 .315 .319 .323 .327 .331 .1415 .16.39 .16.464 .16.364 .390 .394 .398 .402 .406 .409 .417 .16.417 .421 .425 .429 .429 .438 .437 .441 .445 .449 .448 .16.467 .461 .465 .469 .472 .476 .480 .484 .488 .419 .16.496 .500 .504 .508 .512 .516 .520 .524 .528 .420 .424 .445 .448 .488 .419 .16.496 .500 .504 .508 .512 .516 .520 .524 .528 .420 .424 .445 .488 .419 .16.496 .500 .504 .508 .512 .516 .520 .524 .528 .420 .424 .445 .488 .419 .16.496 .500 .504 .508 .512 .516 .520 .524 .528 .420 .424 .445 .449 .448 .16.457 .461 .465 .469 .472 .476 .480 .484 .488 .419 .16.496 .500 .504 .508 .512 .516 .520 .524 .528 .420 .424 .424 .424 .424 .424 .424 .124 .124											.829
404 15.966 .870 .874 .878 .882 .886 .890 .894 .898 .987 405 15.966 .909 .913 .917 .921 .925 .929 .933 .937 .937 406 15.984 15.988 15.992 15.996 16.000 16.004 16.008 16.012 16.016 1407 16.024 16.028 16.032 16.035 .039 .043 .047 .051 .055 408 16.063 .067 .071 .075 .079 .083 .087 .091 .095 409 16.102 .106 .110 .114 .118 .122 .126 .130 .134 410 16.181 .185 .189 .193 .197 .201 .205 .209 .213 412 16.221 .224 .228 .232 .236 .240 .244 .248 .252 .2418 16.290 .303 .307 .311 .315 .319 .323 .327 .331 415 16.393 16.347 16.350 16.354 16.358 16.362 16.366 16.370 14.16 16.378 .382 .386 .390 .394 .398 .402 .406 .409 417 16.417 .421 .425 .429 .433 .437 .441 .445 .449 16.486 .500 .504 .508 .512 .516 .520 .524 .528 429 16.535 16.539 16.543 16.547 .665 .500 .504 .508 .512 .516 .520 .524 .528 429 16.654 .658 .661 .665 .669 .673 .677 .681 .685 422 16.693 .697 .701 .705 .709 .713 .717 .721 .724 425 16.890 .894 .898 .892 .894 .898 .492 .406 .409 .892 16.890 .894 .898 .892 .894 .898 .492 .406 .409 .422 .428 .882 .428 .428 .428 .428 .428		.827									.865
405         15.945         15.949         15.953         15.957         15.961         15.965         15.963         15.972         15.961           406         15.984         15.988         15.992         15.957         15.961         15.963         15.972         15.976         16.004         16.003         16.012         16.083         16.07         0.075         0.079         0.083         0.047         0.051         0.055           409         16.102         106         110         114         118         1122         126         130         134           410         16.142         16.146         16.150         16.154         16.158         16.161         16.165         16.169         16.173         14           411         16.181         1.85         1.89         1.93         1.97         201         205         209         2.13           412         16.221         2.24         2.282         2.32         2.36         2.90         2.244         2.248         2.52           413         16.260         2.94         .268         .272         2.76         280         .284         2.27         2.91           416         16.383         16.34			.870	.874	.878						.902
406         15.984         15.988         15.992         15.996         16.000         16.004         16.008         16.012         16.012         16.016         16.012         16.012         16.012         16.012         16.012         16.023         16.035         .039         .043         .047         .051         .055         .059         .043         .087         .091         .055         .091         .095         .091         .095         .091         .095         .091         .095         .091         .095         .091         .095         .091         .095         .091         .095         .091         .095         .091         .134         .134         .141         16.181         16.181         .183         .193         .197         .201         .205         .209         .213         .224         .228         .232         .236         .240         .244         .248         .252         .276         .280         .284         .287         .291         .231         .323         .327         .331         .315         .319         .323         .327         .331         .316         .481         .461         .461         .461         .4628         .429         .433         .437         .441<	15.	.906	.909	.913	.917	.921	.925	.929	.933	.937	.941
407   16.024   16.028   16.032   16.035   .039   .043   .047   .051   .055   .054   .069   .067   .071   .075   .079   .083   .087   .091   .095   .094   .096   .106   .110   .114   .118   .122   .126   .130   .134   .141   .16.181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181   .185   .189   .193   .197   .201   .205   .209   .213   .181											15.980
408         16.063         .067         .071         .075         .079         .083         .087         .091         .095           409         16.102         .106         .110         .114         .118         .122         .126         .130         .134           410         16.142         16.146         .16.150         16.154         16.158         16.161         16.165         209         .205         .299         .232         .236         .240         .244         .248         .252         .241         .242         .228         .232         .236         .240         .244         .248         .252         .241         .241         .287         .291         .291         .244         .248         .252         .241         .248         .252         .241         .248         .252         .244         .248         .252         .241         .241         .245         .229         .236         .240         .244         .248         .252         .241         .241         .245         .249         .338         .402         .466         .466         .469         .372         .476         .480         .449         .448         .448         .448         .448         .448											16.020
409         16.102         .106         .110         .114         .118         .122         .126         .130         .134           410         16.142         16.146         16.150         16.154         16.158         16.161         16.165         16.169         16.173         1           411         16.181         .185         .189         .193         .197         .201         .205         .209         .213           412         16.280         .264         .268         .272         .276         .280         .284         .287         .291           414         16.299         .303         .307         .311         .315         .319         .323         .327         .331           415         16.339         16.343         16.347         16.350         16.354         16.358         16.362         16.366         16.370         1447         441         .445         .449         .447         .441         .445         .449         .447         .434         .444         .448         .448         .448         .448         .448         .448         .448         .448         .441         .445         .449         .472         .476         .480         .4											.059
411         16.181         .185         .189         .193         .197         .201         .205         .209         .213           412         16.221         .224         .228         .232         .236         .240         .244         .248         .252           414         16.269         .264         .268         .272         .276         .280         .284         .287         .291           414         16.299         .303         .307         .311         .315         .319         .323         .327         .331           415         16.339         16.343         16.347         16.350         16.354         16.358         16.362         16.366         16.370         1446         .469         .409         .433         .437         .441         .445         .446         .465         .469         .432         .476         .480         .484         .488         .491         .446         .465         .469         .472         .476         .480         .484         .488         .491         .486         .499         .433         .437         .441         .445         .484         .488         .491         .486         .499         .433         .437											.098
411       16.181       .185       .189       .193       .197       .201       .205       .209       .213         418       16.221       .224       .228       .232       .236       .240       .244       .248       .252         414       16.299       .303       .307       .311       .315       .319       .323       .327       .331         415       16.339       16.343       16.347       16.350       16.354       16.358       16.362       16.366       16.370       1409         417       16.417       .421       .425       .429       .433       .437       .441       .445       .449       .472       .476       .480       .484       .488       .484       .488       .492       .483       .437       .441       .445       .448       .448       .488       .441       .445       .448       .448       .448       .448       .448       .448       .448       .441       .445       .449       .472       .476       .480       .484       .488       .492       .66.61       .655       .516       .559       .656       .606       .606       .606       .606       .606       .606       .606		.142	16.146	16.150	16.154	16.158	16.161	16,165	16.169	16.173	16.177
412       16.221       .224       .228       .232       .236       .240       .244       .248       .252       .291         414       16.260       .264       .268       .272       .276       .280       .284       .287       .291         415       16.339       16.343       16.347       16.350       16.354       16.358       16.362       16.366       16.370       1         416       16.378       .382       .386       .390       .394       .398       .402       .406       .409         417       16.417       .421       .425       .429       .433       .437       .441       .445       .449         418       16.457       .461       .465       .469       .472       .476       .480       .484       .488         419       16.456       .500       .504       .508       .512       .516       .520       .524       .528         420       16.555       16.553       16.543       16.547       16.555       16.555       16.563       16.567       16.564       422       .626       .630       .634       .638       .642       .646         421       16.567       .658 </td <td></td> <td></td> <td></td> <td>.189</td> <td>.193</td> <td>.197</td> <td></td> <td></td> <td></td> <td>.213</td> <td>.217</td>				.189	.193	.197				.213	.217
414         16.299         .303         .307         .311         .315         .319         .323         .327         .331           415         16.339         16.343         16.347         16.350         16.354         16.358         16.362         16.366         16.370         1           417         16.417         .421         .425         .429         .433         .437         .441         .445         .449           418         16.457         .461         .465         .469         .472         .476         .480         .484         .488           419         16.496         .500         .504         .508         .512         .516         .520         .524         .528           420         16.535         16.539         16.543         16.547         16.551         16.555         16.559         16.563         16.567         1           421         16.575         .579         .583         .587         .591         .595         .598         .602         .606           422         16.614         .618         .622         .626         .630         .634         .638         .642         .646         .646           423					.232		.240	.244			. 256
415         16.339         16.343         16.347         16.350         16.354         16.358         16.362         16.366         16.370         14.38         16.370         14.39         44.33         44.37         44.1         445         449         433         437         441         445         449         448         442         16.64         658         661         665         669         673         673         672         681         685         422         666         663         669											. 295
416         16.378         .382         .386         .390         .394         .398         .402         .406         .409           417         16.417         .421         .425         .429         .433         .437         .441         .445         .449           418         16.457         .461         .465         .469         .472         .476         .480         .484         .488           419         16.496         .500         .504         .508         .512         .516         .520         .524         .528           420         16.535         16.539         16.543         16.547         16.551         16.555         16.563         16.567         .421         16.575         .579         .583         .587         .591         .595         .598         .602         .606         .622         .626         .630         .634         .638         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646         .642         .646	16.	.299	.303	.307	.311	.315	.319	.323	.327	.331	.335
417       16.417       .421       .425       .429       .433       .437       .441       .445       .449         418       16.457       .461       .465       .469       .472       .476       .480       .484       .488         419       16.496       .500       .504       .508       .512       .516       .520       .524       .528         420       16.535       16.539       16.543       16.547       16.551       16.555       16.559       16.563       16.567       16.562       .606       .606       .606       .606       .606       .608       .634       .638       .642       .646       .688       .661       .665       .669       .673       .677       .681       .685       .646       .685       .669       .673       .677       .681       .685       .642       .442       .688       .642       .646       .424       .688       .642       .646       .685       .661       .665       .669       .673       .677       .681       .685       .642       .442       .445       .16.782       .678       .878       .882       .882       .882       .882       .882       .882       .882       .882											16,374
418         16.457         .461         .465         .469         .472         .476         .480         .484         .488           419         16.496         .500         .504         .508         .512         .516         .520         .524         .528           420         16.535         16.539         16.543         16.547         16.551         16.555         16.559         16.563         16.567         16.664         .618         .622         .626         .630         .634         .638         .642         .646         .642         .646         .646         .665         .669         .673         .677         .681         .685         .641         .665         .669         .673         .677         .681         .685         .424         16.693         .697         .701         .705         .709         .713         .717         .721         .724         .724         .724         .724         .425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764         16.744         16.748         16.752         16.756         16.760         16.764         16.744         16.744         16.748         16.752											.413
419         16.496         .500         .504         .508         .512         .516         .520         .524         .528           420         16.535         16.539         16.543         16.547         16.551         16.555         16.559         16.563         16.567         16.567           421         16.575         .579         .583         .587         .591         .595         .598         .602         .606           422         16.614         .618         .622         .626         .630         .634         .638         .642         .646           423         16.654         .658         .661         .665         .669         .673         .677         .681         .685           424         16.693         .697         .701         .705         .709         .713         .717         .721         .724           425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764           427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           429         16.890         .8											.453
421         16.575         .579         .583         .587         .591         .595         .598         .602         .606           422         16.614         .618         .622         .626         .630         .634         .638         .642         .646           423         16.654         .658         .661         .665         .669         .673         .677         .681         .685           424         16.693         .697         .701         .705         .709         .713         .717         .721         .724           425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764         16.764         16.772         .776         .780         .784         .787         .791         .795         .799         .803           427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           428         16.850         .854         .858         .862         .866         .870         .874         .878         .882           429         16.890         16.949         16.957         16.961 <td></td> <td>.496</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>.532</td>		.496									.532
421         16.575         .579         .583         .587         .591         .595         .598         .602         .606           422         16.614         .618         .622         .626         .630         .634         .638         .642         .646           423         16.654         .658         .661         .665         .669         .673         .677         .681         .685           424         16.693         .697         .701         .705         .709         .713         .717         .721         .724           425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764         16.744         16.748         16.752         16.756         16.760         16.764         16.744         16.744         16.748         16.752         16.756         16.760         16.764         16.744         16.744         16.748         16.752         16.756         16.760         16.764         16.784         18.752         18.83         839         843         428         16.850         854         858         .862         .866         .870         .874         .878         .882         429	16.		16.539	16.543	16.547	16.551	16.555	16.559	16.563	16.567	16.571
423         16.654         .658         .661         .665         .669         .673         .677         .681         .685           424         16.693         .697         .701         .705         .709         .713         .717         .721         .724           425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764         16.744           426         16.772         .776         .780         .784         .787         .791         .795         .799         .803           427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           428         16.850         .854         .858         .862         .866         .870         .874         .878         .882           429         16.890         .894         .898         .902         .906         .910         .913         .917         .921           430         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         14.942           431         17	16.										.610
424         16.693         .697         .701         .705         .709         .713         .717         .721         .724           425         16.732         16.736         16.740         16.744         16.748         16.752         16.756         16.760         16.764         16.744         .787         .791         .795         .799         .803         .827         .831         .835         .839         .843         .828         .827         .831         .835         .839         .843         .828         .822         .866         .870         .874         .878         .882         .829         .828         .822         .866         .870         .874         .878         .882         .822         .866         .870         .874         .878         .882         .824         .898         .902         .906         .910         .913         .917         .921         .921         .948         .988         .902         .906         .910         .913         .917         .921         .921         .948         .988         .902         .906         .910         .913         .917         .921         .944         .948         .948         .948         .948         .948         .948											.650
426         16.772         .776         .780         .784         .787         .791         .795         .799         .803           427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           428         16.850         .854         .858         .862         .866         .870         .874         .878         .882           429         16.890         .894         .898         .902         .906         .910         .913         .917         .921           430         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         1           431         16.969         16.972         16.976         16.980         16.984         16.989         16.992         16.996         17.000         1           432         17.008         17.012         17.016         17.020         17.024         17.028         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.126 <t< td=""><td></td><td>100</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>.689</td></t<>		100									.689
426         16.772         .776         .780         .784         .787         .791         .795         .799         .803           427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           428         16.850         .854         .858         .862         .866         .870         .874         .878         .882           429         16.890         .894         .898         .902         .906         .910         .913         .917         .921           430         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         1           431         16.969         16.972         16.976         16.980         16.984         16.989         16.992         16.996         17.000         1           432         17.008         17.012         17.016         17.020         17.024         17.028         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.126 <t< td=""><td>16.</td><td>.732</td><td>16.736</td><td>16.740</td><td>16.744</td><td>16.748</td><td>16.752</td><td>16.756</td><td>16.760</td><td>16 764</td><td>16.76</td></t<>	16.	.732	16.736	16.740	16.744	16.748	16.752	16.756	16.760	16 764	16.76
427         16.811         .815         .819         .823         .827         .831         .835         .839         .843           428         16.850         .854         .858         .862         .866         .870         .874         .878         .882           429         16.890         .894         .898         .902         .906         .910         .913         .917         .921           430         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         1           431         16.969         16.972         16.966         16.980         16.984         16.989         16.992         16.996         17.000         1           432         17.008         17.012         17.016         17.020         17.024         17.028         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.086         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.158         1           435											.807
429         16.890         .894         .898         .902         .906         .910         .913         .917         .921           430         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         1           431         16.969         16.972         16.976         16.980         16.984         16.988         16.992         16.966         17.000         1           432         17.008         17.012         17.016         17.020         17.024         17.028         17.032         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.087         .091         .095         .098         .102         .106         .110         .114         .118           435         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158         1           436         17.165         .169         .173         .177         .181         .185         .189         .193         .197         .19					.823						.847
480         16.929         16.933         16.937         16.941         16.945         16.949         16.953         16.957         16.961         1           481         16.969         16.972         16.976         16.980         16.984         16.988         16.982         16.996         17.000         1           482         17.008         17.012         17.016         17.020         17.024         17.028         17.032         17.035         .039           483         17.047         .051         .055         .059         .063         .067         .071         .075         .079           484         17.087         .091         .095         .098         .102         .106         .110         .114         .118           435         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158         1           436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236      <								.874		.882	.886
431         16.969         16.972         16.976         16.980         16.984         16.988         16.992         16.996         17.000         1           432         17.088         17.012         17.016         17.024         17.028         17.032         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.087         .091         .095         .098         .102         .106         .110         .114         .118           435         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158         1           436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.324 <t< td=""><td>16.</td><td>.890</td><td>.894</td><td>.898</td><td>.902</td><td>.906</td><td>.910</td><td>.913</td><td>.917</td><td>.921</td><td>.92</td></t<>	16.	.890	.894	.898	.902	.906	.910	.913	.917	.921	.92
432         17.008         17.012         17.016         17.020         17.024         17.028         17.032         17.035         .039           433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.087         .091         .095         .098         .102         .106         .110         .114         .118           435         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158         1           436         17.265         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         17.354         17.354         17.354 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>16.96</td>											16.96
433         17.047         .051         .055         .059         .063         .067         .071         .075         .079           434         17.087         .091         .095         .098         .102         .106         .110         .114         .118           435         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158         1           436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         17.344         17.402         .406         .											17.00
484         17.087         .091         .095         .098         .102         .106         .110         .114         .118           485         17.126         17.130         17.134         17.138         17.142         17.146         17.150         17.154         17.158           436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         1441         17.362         .366         .370         .374         .378         .382         .386         .390         .394         .442         17.402         .406         .410         .413											.043
436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         1442         17.402         .406         .370         .374         .378         .382         .386         .390         .394         .442         17.402         .406         .410         .413         .417         .421         .425         .429         .433         .443         17.441         .445         .449         .453         .457         .461         .465         .469         .472         .444         .474         .484         .488         .492         .496         .500         .504 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>,12</td>											,12
436         17.165         .169         .173         .177         .181         .185         .189         .193         .197           437         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         1442         17.402         .406         .410         .413         .417         .421         .425         .429         .433           443         17.441         .445         .449         .453         .457         .461         .465         .469         .472           444         17.480         .484         .488         .492         .496         .500         .504         .508         .512           445         17.520         17.524         17.528         17.532	17.	.126	17.130	17.134	17.138	17.142	17.146	17.150	17,154	17,158	17.16
438         17.205         .209         .213         .217         .221         .224         .228         .232         .236           438         17.244         .248         .252         .256         .260         .264         .268         .272         .276           439         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         14           441         17.362         .366         .370         .374         .378         .382         .386         .390         .394           442         17.402         .406         .410         .413         .417         .421         .425         .429         .433           443         17.441         .445         .449         .453         .457         .461         .465         .469         .472           444         17.480         .484         .488         .492         .496         .500         .504         .508         .512           445         17.520         17.524 <t< td=""><td>3 17.</td><td>.165</td><td>.169</td><td>.173</td><td>.177</td><td>.181</td><td>.185</td><td>.189</td><td>.193</td><td></td><td>.20</td></t<>	3 17.	.165	.169	.173	.177	.181	.185	.189	.193		.20
489         17.284         .287         .291         .295         .299         .303         .307         .311         .315           440         17.323         17.327         17.331         17.335         17.339         17.343         17.347         17.350         17.354         1           441         17.362         .366         .370         .374         .378         .382         .386         .390         .394           442         17.402         .406         .410         .413         .417         .421         .425         .429         .433           443         17.441         .445         .449         .453         .457         .461         .465         .469         .472           444         17.480         .484         .488         .492         .496         .500         .504         .508         .512           445         17.520         17.524         17.528         17.532         17.535         17.539         17.543         17.547         17.551         1									.232	.236	.24
440     17.323     17.327     17.331     17.335     17.339     17.343     17.347     17.350     17.354     14.354       441     17.362     .366     .370     .374     .388     .382     .386     .390     .394       442     17.402     .406     .410     .413     .417     .421     .425     .429     .433       443     17.441     .445     .449     .453     .457     .461     .465     .469     .472       444     17.480     .484     .488     .492     .496     .500     .504     .508     .512       445     17.520     17.524     17.528     17.532     17.535     17.539     17.543     17.547     17.551     1											.28
441     17.362     .366     .370     .374     .378     .382     .386     .390     .394       442     17.402     .406     .410     .413     .417     .421     .425     .429     .433       443     17.441     .445     .449     .453     .457     .461     .465     .469     .472       444     17.480     .484     .488     .492     .496     .500     .504     .508     .512       445     17.520     17.524     17.528     17.532     17.535     17.539     17.543     17.547     17.551     1	2 13		1000-1	200	- 1	1000					1
442     17.402     .406     .410     .413     .417     .421     .425     .429     .433       443     17.441     .445     .449     .453     .457     .461     .465     .469     .472       444     17.480     .484     .488     .492     .496     .500     .504     .508     .512       445     17.520     17.524     17.528     17.582     17.535     17.539     17.543     17.547     17.551     1	17	362		370	374		389	386	17.350	204	17.35
448     17.441     .445     .449     .453     .457     .461     .465     .469     .472       444     17.480     .484     .488     .492     .496     .500     .504     .508     .512       445     17.520     17.524     17.528     17.532     17.535     17.539     17.543     17.547     17.551     1	17			.410	413	.417	.421	.425	429	433	.43
<b>444</b> 17.480 .484 .488 .492 .496 .500 .504 .508 .512 <b>445</b> 17.520 17.524 17.528 17.532 17.535 17.539 17.543 17.547 17.551 1					.453	.457	.461			.472	.470
446   48 Web   100   200   200   200   200   200   200   200   200   200   200   200   200   200   200   200											.510
446 117 5591 5631 567 5711 5751 5701 5921 5971 5011											17.55
			.563	.567	.571	.575	.579	.583	.587	.591	.59
447     17.598     .602     .606     .610     .614     .618     .622     .626     .630       448     17.638     .642     .646     .650     .654     .658     .661     .665     .669			.602								.63
STA 120 200 0227 1222 1222 1222 1222 1222 1						602					.67
9 17.677 .681 .685 .689 .693 .697 .701 .705 .709 9 17.717 .721 .724 .728 .732 .736 .740 .744 .748						739					.713

XXXII.-MILLIMETRES TO INCHES.

		1								
mm.	.0	.1	.2	.8	.4	.5	.6	.7	.8	.9
450	17.717	17.721	17.724	17.728	17.732	17.736	17.740	17.744	17.748	17.752
451	17.756	.760	.764	.768	.772	.776	.780	.784	.787	.791
452	17.795	.799	.803	.807	.811	.815	.819	.823	.827	.831
458	17.835	.839	.843	.847	.850	.854	.858	.862	.866	.870
454	17.874	.878	.882	.886	.890	.894	.898	.902	.906	.910
455	17.913	17.917	17.921	17.925	17.929	17.933	17.937	17.941	17.945	17.949
456	17.953	.957	.961	.965	.969	.972	.976	.980	.984	.988
457	17.992	.996	18.000	18.004	18.008	18.012	18.016	18.020	18.024	18.028
458	18.032	18.035	.039	.043	.047	.051	.055	.059	.063	.067
459	18.071	.075	.079	.083	.087	.091	.095	.098	.102	.106
460	18.110	18.114	18.118	18.122	18.126	18.130	18.134	18.138	18.142	18.146
461	18.150	.154	.158	.161	.165	.169	.173	.177	.181	.185
462	18.189	.193	.197	.201	.205	.209	.213	.217	.221	.224
468	18.228	.232	.236	.240	.244	.248	.252	.256	.260	.264
464	18.268	.272	.276	.280	.284	.287	.291	.295	.299	.303
465	18.307	18.311	18.315	18.319	18.323	18.327	18.331	18.335	18.339	18.343
466	18.347	.350	.354	.358	.362	.366	.370	.374	.378	.382
467	18.386	.390	.394	.398	.402	.406	.410	.413	.417	.421
468	18.425	.429	.433	.437	.441	.445	.449	.453	.457	.461
469	18.465	.469	.472	.476	.480	.484	.488	.492	.496	.500
470	18.504	18.508	18.512	18.516	18.520	18.524	18.528	18.532	18.535	18.539
471	18.543	.547	.551	.555	.559	.563	.567	.571	.575	.579
472	18.583	.587	.591	.595	.598	.602	.606	.610	.614	.618
478	18.622	.626	.630	.634	.638	.642	.646	.650	.654	.658
474	18.661	.665	.669	.673	.677	.681	.685	.689	.693	.697
475	18.701	18.705	18.709	18.713	18.717	18.721	18.724	18.728	18.732	18.736
476	18.740	.744	.748	.752	.756	.760	.764	.768	.772	.776
477	18.780	.784	.787	.791	.795	.799	.803	.807	.811	.815
478	18.819	.823	.827	.831	.835	.839	.843	.847	.850	.854
479	18.858	.862	.866	.870	.874	.878	.882	.886	.890	.894
480	18.898	18.902	18.906	18.910	18.913	18.917	18.921	18.925	18.929	18.933
481	18.937	.941	.945	.949	.953	.957	.961	.965	.969	.972
482	18.976	.980	.984	.988	.992	.996	19.000	19.004	19.008	19.012
488	19.016	19.020	19.024	19.028	19.032	19.035	.039	.043	.047	.051
484	19.055	.059	.063	.067	.071	.075	.079	.083	.087	.091
485	19.095	19.098	19.102	19.106	19.110	19.114	19.118	19.122	19.126	19.130
486	19.134	.138	.142	.146	.150	.154	.158	.161	.165	.169
487	19.173	.177	.181	.185	.189	.193	.197	.201	.205	.209
488	19.213	.217	.221	.224	.228	.232	.236	.240	.244	.248
489	19.252	.256	.260	.264	.268	.272	.276	.280	.284	.287
490	19.291	19.295	19.299	19.303	19.307	19.311	19.315	19.319	19.323	19.327
491	19.331	.335	.339	.343	.347	.350	.354	.358	.362	.366
492	19.370	.374	.378	.382	.386	.390	.394	.398	.402	.406
498	19.410	.413	.417	.421	.425	.429	.433	.437	.441	.445
494	19.449	.453	.457	.461	.465	.469	.473	.476	.480	.484
4-95 4-96 4-97 4-98 4-99 5-00	19.488 19.528 19.567 19.606 19.646 19.685	19.492 .532 .571 .610 .650 .689	19.496 .535 .575 .614 .654 .693	19.500 .539 .579 .618 .658 .697	19.504 .543 .583 .622 .661 .701	19.508 .547 .587 .626 .665 .705	19.512 .551 .591 .630 .669 .709	19.516 .555 .595 .634 .673	19.520 .559 .598 .638 .677	19.524 .563 .602 .642

#### XXXII.-MILLIMETRES TO INCHES.

							<del></del>			
mm.	.0	.1	.2	.8	.4	.5	.6	.7	.8	<u>.</u>
500	19.685	19.689	19.693	19.697	19.701	19.705	19.709	19.713	19.717	19.721
501	19.724	.728	.732	.736	.740	.744	.748	.752	.756	.760
502	19.764	.768	.772	.776	.780	.784	.787	.791	.795	.799
508	19.803	.807	.811	.815	.819	.823	.827	.831	.835	.839
504	19.843	.847	.850	.854	.858	.862	.866	.870	.874	.878
505	19.882	19.886	19.890	19.894	19.898	19.902	19.906	19.910	19.913	19.917
506	19.921	.925	.929	.933	.937	.941	.945	.949	.953	.957
507	19.961	.965	.969	.973	.976	.980	.984	.988	.992	.996
508	20.000	20.004	20.008	20.012	20.016	20.020	20.024	20.028	20.032	20.035
509	20.039	.043	.047	.051	.055	.059	.063	.067	.071	.075
510	20.079	20.083	20.087	20.091	20.095	20.098	20.102	20.106	20.110	20.114
511	20.118	.122	.126	.130	.134	.138	.142	.146	.150	.154
512	20.158	.161	.165	.169	.173	.177	.181	.185	.189	.193
518	20.197	.201	.205	.209	.213	.217	.221	.224	.228	.232
514	20.236	.240	.244	.248	.252	.256	.260	.264	.268	.272
515	20.276	20.280	20.284	20.287	20.291	20.295	20.299	20.303	20.307	20.311
516	20.315	.319	.323	.327	.331	.335	.339	.343	.347	.350
517	20.354	.358	.362	.366	.370	.374	.378	.382	.386	.390
518	20.394	.398	.402	.406	.410	.413	.417	.421	.425	.429
519	20.433	.437	.441	.445	.449	.453	.457	.461	.465	.469
520	20.473	20.476	20.480	20.484	20.488	20.492	20.496	20.500	20.504	20.508
521	20.512	.516	.520	.524	.528	.532	.536	.539	.543	.547
522	20.551	.555	.559	.563	.567	.571	.575	.579	.583	.587
528	20.591	.595	.598	.602	.606	.610	.614	.618	.622	.626
524	20.630	.634	.638	.642	.646	.650	.654	.658	.661	.665
525	20.669	20.673	20.677	20.681	20.685	20.689	20.693	20.697	20.701	20.705
526	20.709	.713	.717	.721	.724	.728	.732	.736	.740	.744
527	20.748	.752	.756	.760	.764	.768	.772	.776	.780	.784
528	20.787	.791	.795	.799	.803	.807	.811	.815	.819	.823
529	20.827	.831	.835	.839	.843	.847	.850	.854	.858	.862
580	20.866	20.870	20.874	20.878	20.882	20.886	20.890	20.894	20.898	20.902
581	20.906	.910	.913	.917	.921	.925	.929	.933	.937	.941
582	20.945	.949	.953	.957	.961	.965	.969	.973	.976	.980
588	20.984	.988	.992	.996	21.000	21.004	21.008	21.012	21.016	21.020
584	21.024	21.028	21.032	21.035	.039	.043	.047	.051	.055	.059
585	21.063	21.067	21.071	21.075	21.079	21.083	21.087	21.091	21.095	21.098
586	21.102	.106	.110	.114	.118	.122	.126	.130	.134	.138
587	21.142	.146	.150	.154	.158	.161	.165	.169	.173	.177
588	21.181	.185	.189	.193	.197	.201	.205	.209	.213	.217
589	21.221	.224	.228	.232	.236	.240	.244	.248	.252	.256
540	21.260	21.264	21.268	21.272	21.276	21.280	21.284	21.287	21.291	21.295
541	21.299	.303	.307	.311	.315	.319	.323	.327	.331	.335
542	21.339	.343	.347	.350	.354	.358	.362	.366	.370	.374
548	21.378	.382	.386	.390	.394	.398	.402	.406	.410	.413
544	21.417	.421	.425	.429	.433	.437	.441	.445	.449	.453
545	21.457	21.461	21 .465	21 .469	21.473	21.476	21.480	21 .484	21.488	21 .492
546	21.496	.500	.504	.508	.512	.516	.520	.524	.528	.532
547	21.535	.539	.543	.547	.551	.555	.559	.563	.567	.571
548	21.575	.579	.583	.587	.591	.595	.598	.602	.606	.610
549	21.614	.618	.622	.626	.630	.634	.638	.642	.646	.650
550	21.654	.658	.661	.665	.669	.673	.677	.681	.685	.689

XXXII.-MILLIMETRES TO INCHES.

mm.	.0	.1	.2	.8	.4	.5	.6	.7	.8	.9
550	21.654	21.658	21.661	21.665	21.669	21.673	21.677	21.681	21.685	21.689
551	21.693	.697	.701	.705	.709	.713	.717	.721	.724	.728
552	21.732	.736	.740	.744	.748	.752	.756	.760	.764	.768
558	21.772	.776	.780	.784	.787	.791	.795	.799	.803	.807
554	21.811	.815	.819	.823	.827	.831	.835	.839	.843	847
555	21.850	21.854	21.858	21.862	21.866	21.870	21.874	21.878	21.882	21.886
556	21.890	.894	.898	.902	.906	.910	.913	.917	.921	.925
557	21.929	.933	.937	.941	.945	.949	.953	.957	.961	.965
558	21.969	.973	.976	.980	.984	.988	.992	.996	22.000	22.004
559	22.008	22.012	22.016	22.020	22.024	22.028	22.032	22.036	.039	.043
560	22.047	22.051	22.055	22.059	22.063	22.067	22.071	22.075	22.079	22.083
561	22.087	.091	.095	.098	.102	.106	.110	.114	.118	.122
562	22.126	.130	.134	.138	.142	.146	.150	.154	.158	.161
568	22.165	.169	.173	.177	.181	.185	.189	.193	.197	.201
564	22.205	.209	.213	.217	.221	.224	.228	.232	.236	.240
565	22.244	22.248	22.252	22.256	22.260	22.264	22.268	22.272	22.276	22.280
566	22.284	.287	.291	.295	.299	.303	.307	.311	.315	.319
567	22.323	.327	.331	.335	.339	.343	.347	.350	.354	.358
568	22.362	.366	.370	.374	.378	.382	.386	.390	.394	.398
569	22.402	.406	.410	.413	.417	.421	.425	.429	.433	.437
570	22.441	22.445	22.449	22.453	22.457	22.461	22.465	22.469	22.473	22.476
571	22.480	.484	.488	.492	.496	.500	.504	.508	.512	.516
572	22.520	.524	.528	.532	.536	.539	.543	.547	.551	.555
578	22.559	.563	.567	.571	.575	.579	.583	.587	.591	.595
574	22.598	.602	.606	.610	.614	.618	.622	.626	.630	.634
575	22.638	22.642	22.646	22.650	22.654	22.658	22.661	22.665	22.669	22.673
576	22.677	.681	.685	.689	.693	.697	.701	.705	.709	.713
577	22.717	.721	.724	.728	.732	.736	.740	.744	.748	.752
578	22.756	.760	.764	.768	.772	.776	.780	.784	.787	.791
579	22.795	.799	.803	.807	.811	.815	.819	.823	.827	.831
580	22.835	22.839	22.843	22.847	22.850	22.854	22.858	22.862	22.866	22.870
581	22.874	.878	.882	.886	.890	.894	.898	.902	.906	.910
582	22.913	.917	.921	.925	.929	.933	.937	.941	.945	.949
588	22.953	.957	.961	.965	.969	.973	.976	.980	.984	.988
584	22.992	.996	23.000	23.004	23.008	23.012	23.016	23.020	23.024	23.028
585	23.032	23.036	23.039	23.043	23.047	23.051	23.055	23.059	23.063	23.067
586	23.071	.075	.079	.083	.087	.091	.095	.098	.102	.106
587	23.110	.114	.118	.122	.126	.130	.134	.138	.142	.146
588	23.150	.154	.158	.161	.165	.169	.173	.177	.181	.185
589	23.189	.193	.197	.201	.205	.209	.213	.217	.221	.224
590	23.228	23.232	23.236	23.240	23.244	.287	23.252	23.256	23.260	23.264
591	23.268	.272	.276	.280	.284		.291	.295	.299	.303
592	23.307	.311	.315	.319	.323		.331	.335	.339	.343
598	23.347	.350	.354	.358	.362		.370	.374	.378	.382
594	23.386	.390	.394	.398	.402		.410	.413	.417	.421
595 596 597 598 599 <b>6</b> 00	23.425 23.465 23.504 23.543 23.583 23.622	23.429 .469 .508 .547 .587 .626	23.433 .473 .512 .551 .591 .630	23 . 437 . 476 . 516 . 555 . 595 . 634	23.441 .480 .520 .559 .598 .638	23.445 .484 .524 .563 .602 .642	23.449 .488 .528 .567 .606 .646	23.453 .492 .532 .571 .610 .650	23.457 .496 .536 .575 .614	

XXXII.-MILLIMETRES TO INCHES.

Ė										
mm.	.0	.1	.2	. <b>3</b>	.4	.5	.6	.7	.s 	.9
600	23.622	23.626	23.630	23.634	23.638	23.642	23.646	23.650	23.654	23.658
601 602	23.661 23.701	.665 .705	.669 .709	.673 .713	.677	.681	.685	.689	.693	.697 .736
608	23.740	.744	.748	.752	.717 .756	.721 .760	.724 .764	.728 .768	.73 <b>2</b> .772	.776
604	23.780	.784	.787	.791	.795	.799	.803	.807	.811	.815
605	23.819	23.823	23.827	23.831	23.835	23.839	23.843	23.847	23.850	23.854
606 607	23.858 23.898	.862	.866 .906	.870 .910	.874 .913	.878 .917	.882 .921	.886 .925	.890 .929	.894 .933
608	23.937	.941	.945	.949	.953	.957	.961	.965	.969	.973
609	23.976	.980	.984	. <b>9</b> 88	.992	.996	24.000	24.004	24.008	24.012
610	24.016	24.020	24.024	24.028	24.032		24.039	24.043	24.047	24.051
611 612	24.055 24.095	.059	.063 .102	.067 .106	.071 .110	.075 .114	.079 .118	.083	.087	.091 .130
618	24.134	138	.142	.146	.150	.154	.158	.161	.165	.169
614	24.173	.177	.181	.185	.189	.193	.197	.201	.205	.209
615	24.213	24.217	24.221	24.224		24.232	24.236	24.240	24.244	24.248
616 617	24.252	.256 .295	.260	.264	.268	.272	.276 .315	.280	.284	.287 .327
618	24.291	.335	.339	.343	.347	.350	.354	.358	362	.366
619	24.370	.374	.378	.382	.386	.390	.394	.398	.402	.406
620	24:410	24.413	24.417	24.421	24.425	24.429	24.433	24.437	24.441	24.445
621 622	24.449 24.488	.453	.457 .496	.461 .500	.465	.469 .508	.473 .512	.476 .516	.480	.484 .524
628	24.528	.532	.536	.539	.543	.547	.551	.555	.559	.563
624	24.567	.571	.575	.579	.583	.587	.591	.595	.599	.602
625	24.606	24.610		24.618		24.626	24.630	24.634		24.642
626 627	24.646 24.685	.650 .689	.654	.658 .697	.661	.665	.669 .709	.673 .713	.677 .717	.681 .721
628	24.724	.728	.732	.736	.740	.744	.748	.752	.756	.760
629	24.764	.768	.772	.776	.780	.784	.787	.791	.795	.799
680	24.803		24.811			24.823	24.827	24.831		24.839
681 682	24.843 24.882	.847	.850	.854 .894	.858 .898	.862 .902	.866 .906	.870 .910	.874 .913	.878 .917
683	24.921	.925	.929	.933	937	.941	.945	949	.953	.957
684	24.961	.965	.969	.973	.976	.980	.984	.988	.992	.996
685	25.000 25.039	25.004	25.008	25.012 .051			25.024		25.032	25.036
636 637	25.039	.043	.047	.091	.055	.059	.063	.067	.071	.075 .114
638	25.118	.122	.126	.130	.134	.138	.142	.146	.150	.154
689	25.158	.161	.165	.169	.173	.177	.181	.185	.189	.193
640	25.197			25.209				25.224		25.232
641	25.236		.244	.248	.252	.256	.260		.268	.272
642 643	25.276 25.315	.280 .319	.284	.287 .327	.291	.295	.339	.303	.307	.311
644	25.354	.358	.362	.366	.370	.374	.378	.382	.386	.390
645	25.394	25.398	25.402	25.406	25.410	25.413	25.417	25.421	25.425	25.429
646	25.433	.437	.441	.445	.449	.453	.457	.461	.465	.469
647 648	25.473 25.512	.476 .516	.480	.484 .524	.488 .528	.492	.496 .536	.500	.504	.508
649	25.551	.555	.559	.563	.567	.571	.575	.579	.583	.587
650	25.591	.595	.599	.602	.606	.610	.614	.618	.622	.626
			L	<u> </u>	<u> </u>	<u> </u>	L	<u> </u>	1	

XXXII.-MILLIMETRES TO INCHES.

mm.	.0	.1	æ	·. <b>.</b> 8	.4	.5	.6	.7	.8	.9
650 651 652 658	25.591 25.630 25.669 25.709	25.595 .634 .673 .713	.638 .677	25.602 .642 .681 .721	25.606 .646 .685 .724	25.610 .650 .689 .728	25.614 .654 .693 .732	25.618 .658 .697 .736	25.622 .661 .701 .740	25.626 .665 .705 .744
654 655 656	25.748 25.787 25.827	.752	.756 25.795	.760	.764 25.803 .843	.768	.772	.776 25.815 .854	.780 25.819	.784
657 658 659	25.866 25.906 25.945	.870 .910 .949	.874 .913 .953	.878 .917 .957	.882 .921 .961	.886 .925 .965	.890 .929 .969	.894 .933 .973	.898.	.902 .941 .980
660 661 662 663 664	25.984 26.024 26.063 26.102 26.142	25.988 .028 .067 .106 .146	25.992 .032 .071 .110 .150	25.996 .036 .075 .114 .154	26.000 .039 .079 .118 .158	26.004 .043 .083 .122 .161	26.008 .047 .087 .126 .165	26.012 .051 .091 .130 .169	.055 .095	26.020 .059 .099 .138 .177
665 666 667 668 669	26.181 26.221 26.260 26.299 26.339	26.185 .224 .264 .303 .343	26.189 .228 .268 .307 .347	26.193 .232 .272 .311 .350	26.197 .236 .276 .315 .354	.240 .280	26.205 .244 .284 .323 .362	26.209 .248 .287 .327 .366	26.213 .252 .291 .331 .370	26.217 .256 .295 .335 .374
670 671 672 678 674	26.378 26.417 26.457 26.496 26.536	26.382 .421 .461 .500 .539	26.386 .425 .465 .504 .543	26.390 .429 .469 .508 .547	26.394 .433 .473 .512 .551	26.398 .437 .476 .516 .555	26.402 .441 .480 .520 .559	26.406 .445 .484 .524 .563		26.413 .453 .492 .532 .571
675 676 677 678 679	26.575 26.614 26.654 26.693 26.732	26.579 .618 .658 .697 .736	26.583 .622 .661 .701 .740	26.587 .626 .665 .705 .744	26.591 .630 .669 .709 .748	. 634	26.599 .638 .677 .717 .756	26.602 .642 .681 .721 .760	.724	.650
680 681 682 683 684	26.772 26.811 26.850 26.890 26.929	26.776 .815 .854 .894 .933	26.780 .819 .858 .898 .937	26.784 .823 .862 .902 .941	26.787 .827 .866 .906 .945	.831 .870	.835 .8 <b>74</b>	.839	.882	.847 .886
685 686 687 688 689	26.969 27.008 27.047 27.087 27.126	26.973 27.012 .051 .091 .130	27.016 .055 .095	.059 .099	26.984 27.024 .063 .102 .142	27.028 .067	27.032 .071 .110	27.036	.079	.043
690 691 692 698 694	27.165 27.205 27.244 27.284 27.323	27.169 .209 .248 .287 .327	27.173 .213 .252 .291 .331		27.181 .221 .260 .299 .339	.224	27.189 .228 .268 .307 .347	.232		.240 .280 .319
695 696 697 698 699 700	27.362 27.402 27.441 27.480 27.520 27.559	27.366 .406 .445 .484 .524 .563	27.370 .410 .449 .488 .528 .567	27.374 .413 .453 .492 .532 .571	27.378 .417 .457 .496 .536 .575	27.382 .421 .461 .500 .539 .579	27.386 .425 .465 .504 .543 .583	27.390 .429 .469 .508 .547	27.394 .433 .473 .512 .551 .591	.437 .476 .516

#### XXXII.-MILLIMETRES TO INCHES.

mm.	• .0	.1	.2	.8	.4	.5	.6	.7	.8	.9
700	27.559	27.563	27.567	27.571	27.575	27.579	27.583	27.587	27.591	27.595
701 702 708	27.599	.602	.606	.610	.614	.618	.622	.626	.630	l .634
702	27.638	.642 .681	.646 .685	.650 .689	.654 .693	.658 .697	.662 .701	.665 .705	.669	.673
708 704	27.677 27.717	.721	.724	.728	.732	.736	.701	.705	.709 .748	.713 .752
705	27.756	27.760	27.764	27.768	27.772	27.776	27.780	27.784	27.787	27.791
706 707	27.795 27.835	.799 .839	.803 .843	.807 .847	.811 .850	.815 .854	.819 .858	.823 .862	.827	.831 .870
708	27.874	.878	.882	.886	.890	.894	.898	.902	.906	.910
709	27.913	.917	.921	.925	.929	.933	.937	.941	.945	
710	27.953	27.957 27.996	27.961	27.965	27.969	27.973	27.976	27.980	27.984	27.988
711	27.992 28.032	28.036	28 000 .039	28.004 .043	28.008 .047	28.012 .051	.055	28.020	28.024	28 028 .067
711 712 718	28.071	.075	.079	.083	.087	.091	.095	.099	28.024 063 .102	.106
714	28.110	.114	.118	.122	.126	.130	.134	.138	.142	.146
715 716	28.150 28.189	28.154 .193	28.158 .197	28.162 .201	28.165 .205	28.169 .209	28.173 213	28.177 .217	28.181 .221	28.185 .224
716 717	28.189	.193	.197	.201	.205	.209	.252	.217	.221	.224
718	28.268	.272	.276	.280	.28+	.287	.291	.295	.299	303
719	28.307	.311	.315	.319	.323	.327	.331	.335	.339	.343
720 721	28.347 28.386	28.350 .390	28.354 .394	28.358	28.362	28.366 .406	28.370 .410	28.374		28.382
721 722	28.386	.429	.433	.598	.402	.445	.410	.413 .453	.417 .457	.421 .461
722 728	28.465	.469	.473	.398 .437 .476	.480	.484	.488	.492	.496	.500
724	28.504	.508	.512	.516	.520	.524	.528	.532	.536	.539
725	28.543	28.547	28.551	28.555	28.559	28.565	28.567	28.571	28.575	
726 727	28.583 28.622	.587 .626	.591 . <b>6</b> 30	.595 .634 .673	.599 .638	.602 .642	.606 .646	.610 .650	.614 .654	.618 .658
727 728	28.662	.665	<b>.6</b> 69	.673	.677	.681	.685	.689	.693	.697
729	28.701	.705	.709	.713	.717	.721	.724	.728	.732	.736
780 791	28.740	28.744 .784	28.748	28.752	28.756	28.760	28.764	28.768	28.772	28.776
781 782 788	28.780 28.819	.823	.787 .827	.791 .831	.795 .835	.799 .839	.803 .843	.807 .847	.811 .850	.815 .854
788	28.858	.862	.866	.831 .870	.874	.878	.882	.886	.890	.894
784	28.898	.902	.906	.910	.913	.917	.921	.925	.929	.933
785 786	28.937 28.976	28.941 .980	28.945 .984	28.949 .988	28.953 .992	28.957 .996	28.961 29.000		28.969 29.008	28.973 29.012
787	29.016	29.020	29.024	29.028	29.032	<b>29</b> .036	.039	.013	.047	.051
788	29.055	.059	.063	.067	.071	.075	.079	.083	.087	.091
789	29.095	.099	.102	.106	.110	.114	.118	ı	.126	.130
740 741	29.134 29.173	29.138	29.142	29.146	29.150	29.154	29.158	29.162	29.165 .205	29.169 .209
742	29.213	.217	.221	.224	.228	.232	.236	240	.205	.202
<b>748</b>	29.252	.256	.260	.264	.268	.272	.276	.280	.284	.287
744	29.291	.295	.299	. <b>3</b> 03	.307	.311	.315	.319	.323	.327
745 746	29.331 29.370	29.335 .374	29.339 .378	29.343 .382	29.347 .386	29. <b>3</b> 50 .390	29.354 .394	29.358 .398	29.362 .402	29.366
747	29.410	.413	.417	.421	.425	.390	.433	.437	.402	.40 <del>0</del> .445
748	29.449	.453	.457	.461	.465	.469	.473	.476	.480	.484
749 750	29.488	.492	.496	.500	.504	.508	.512	.516	.520	.524
100	29.528	.532	.5 <b>3</b> 6	.539	.543	.547	.551	.555	.559	.563

XXXII.-MILLIMETRES TO INCHES.

mm.	.0	.1	.2	.8	.4	.5	.6	.7	.8	.9
750	29,528	29.532	29.536	29.539	29.543	29.547	29.551	29.555	29.559	29.563
751	29.567	.571	.575	.579	.583	.587	.591	.595	.599	.602
752	29,606	.610	.614	.618	.622	.626	.630	.634	.638	.642
753	29.646	.650	.654	.658	.662	.665	669	.673	.677	.681
754	29.685	.689	.693	.697	.701	.705	.709	.713	.717	.721
755	29,725	29.728	29.732	29.736	29.740	29.744	29.748	29.752	29.756	29.760
756	29.764	.768	.772	.776	.780	.784	.787	.791	.795	.799
757 758	29.803 29.843	.807 .847	.811 .850	.815 .854	.819 .858	.823 .862	.827 .866	.831 .870	.835 .874	.839 .878
759	29.882	.886	.890	.894	.898	.902	.906	.910	.913	.917
760	29.921	29.925	29.929	29.933	29.937	29.941	29.945	29.949	29 953	29.957
761	29.961	. 965	.969	.973	.976	.980	.984	.988	.992	.996
762	30.000	30.004	30.008	30.012	30.016	<b>3</b> 0.0 <b>2</b> 0	30.024	30.028	30 032	30.036
768	30.039	.043	.047	.051	.055	.059	.063	.067	.071	.075
764	30.079			.091	.095	.099	.102	.106	.110	.114
765	30.118	30.122	30.126	30.130	30.134		30.142	30.146		30.154
766	30 158	.162	.165	.169	.173 .213	.177 .217	.181	.185	.189	.193
767 768	30.197 30.236	.201 .240	.205	.209 .248	.252	.217	.221 .260	·.225 .264	.228 268	.232
769	30.276	280	.284	.287	.291	.295	.299	.303	.307	311
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770	30.315 30.354	30.319	30.323	30.327	30.331 .370	$30.335 \\ .374$	30.339	30.343	30.347	30.350
771 772	30.394	.398	.402	.406	.410	.413	.417	.382	.425	.390
773	30.433	.437	.441	.445	.449	.453	.457	.461	.465	.469
774	30 473	.476	.480	.484	.488	.492	.496	.500	.504	.508
775	30.512	30.516	30.520	30.524	30.528		30.536	30.539	30.543	30.547
776	30.551	.555	. 559	.563	. 567	.571	.575	.579	.583	.587
777	30.591	.595	.599	.602	.606		.614	.618	.622	.626
778 779	30.630	.634 .673	.638 .677	. 642 . 681	.646 .685	.650 .689	.654 .693	.658	.662 .701	.665
1	30.669	1						.697		.705
780	30.709	30.713	30.717	30.721	30.725		30.732	30.736	30.740	30.744
781	30.748	.752 .791	.756 .795	.760 .799	.764 .803	.768 .807	.772	.776	.780	.784
782 783	30 787 30.827	.831	.835	.839	.843	.847	.811 .850	.815	.819 .858	.823
784	30 866	.870	.874	.878	.882	.886	.890	.894	.898	.902
785	30.906	30.910	1   <b>3</b> 0.913	30.917	30.921	30.925	30.929	30.933	30.937	30.941
786	30.945	.949	.953	.957	.961	.965	.969	.973	.976	.980
787	30.984	.988	.992	.996	31.000		31.008	31.012	31.016	31.020
788	31.024	31.028	31.032	31.036	.039	.043	.047	.051	.055	.059
789	31.063	.067	.071	.075	.079	.083	.087	.091	.095	.099
790	31.102	31.106	31.110	31.114		31.122		31.130		31.138
791	31.142	.146	.150	.154	.158	.162	. 165	.169	.173	.177
792	31.181	.185	.189	.193	.197	.201	.205	.209	.213	.217
798 79 <b>4</b>	31.221 31.260	.225 .264	.228 .268	.232 .272	.236 .276	.240 .280	.244 .284	.248 .287	.252 .291	.295
795	31.299	31.303	31.307	31.311	31.315	31.319	31.323	31.327	31.331	31.335
796	31.339	.343	.347	31.311	.354	.358	.362	.366	.370	374
797	31.378	.382	.386	.390	.394	.398	.402	.406	.410	.374
<b>798</b>	31.417	.421	.425	.429	.394 .433	.437	.441	.445	.449	آم.
799	31.457	.461	.465	.469	.473.	.476	.480	.484	488	( .
800	31.496	.500	.504	.508	.512	.516	/ .520	.52A	£ .523	0/
	<u></u>	<u> </u>		<u> </u>	l	1	1		<del></del>	

97

#### TABLE XXXIII .- METRES TO FEET.

1 m. — 3.28085 feet. (Original.)

					Original.					
Metres	0	1	2	<b>8</b>	4	5	6	7	8	9
0	0	3	7	10	13	16	20	23	26	30
	<b>33</b>	36	39	43	46	49	52	56	59	62
10 20	66	69	72	75	79	82	85	89	92	95
80	98	102	105	108	112	115	118	121	125	128
40	131	135	138	141	144	148	151	154	157	161
50	164	167	171	174	177	180	184	187	190	194
	197	200	203	207	210	213	217	220	223	226
60 70	230	233	236	240	243 276	246	249	253	256	259
80	262	266	269	272	276	279	282	285	289	292
90	295	299	<b>3</b> 02	305	308	312	315	318	322	325
100	328	331	335	338	341	344	348	351	354	358
110	361	364	367	371	374	377	381	384	387	300
120	394	397	400	404	407	410	413	417	420	390 423
180	427	430	433	436	440	443	446	449	453	456
140	459	463	466	469	472	476	479	482	486	489
150	492	495	499	502	505	509	512	515	518	522
160	525	528	531	535	538	541	545	548	551	554
170	558	561	564	568	571 604	574	577	581	584	587
180	591	594	597	600	636	607	610	614	617	620
190	623	627	630	633		640	643	646	650	653
200	656	659	663	666	669	673	676	679	682	686
210	689	692	696	699	702	705	709	712	715	719
220	722	725	728 761	732	735 768	705 738 771	741	745	748	751
230 240	755 787	758 791	794	764 797	801	804	77 <u>4</u> 807	778 810	781 814	784 817
250	820	823	827	830	833	837	840	843	846	850
260	853	856	860	863	866	869	873	876	879	882
270	886	889	892	896	1899	902	906	909	912	915
280	919	922	925	928	932	935	938	942	945	948
290	951	955	958	961	965	968	971	974	978	981
800	984	988	991	994	997	1001	1004	1007	1011	1014
810	1017	1020	1024	1027	1030	1033	1037	1040	1043	1047
820	1050	1053	1056	1060	1063	1066	1070	1073	1076	1079
330	1083	1086	1089	1093	1096	1099	1102	1106	1109.	1112
340	1115	1119	1122	1125	1129	1132	1135	1138	1142	1145
850	1148	1152	1155	1158	1161	1165	1168	1171	1175	1178
860	1181	1184	1188	1191	1194	1198	1201	1204	1207	1211
370	1214	1217	1220 1253	1224	1194 1227 1260	<b>123</b> 0	1234	1237	1240	1243 1276
880	1247	1250	1253	1257	1260	1263	1266	1270	1273	1276
890	1280	1283	1286	1289	1293	1296	1299	1302	1306	1309
400	1312	1316	1319	1322	1325	1329	1332	1335	1339	1342
410	1345	1348	1352	1355	1358	1362	1365	1368	1371	1375
420	1378	1381	1385	1388	1391	1394	1398	1401	1404	1407
480	1411	1414	1417	1421	1424	1427	1430	1434	1437	1440
440	1444	1447	1450	1453	1457	1460	1463	1467	1470	1473
450	1476	1480	1483 1516	1486	1490	1493 1526	1496 1529	1499	1503	1506
460 470	1509 1542	1512 1545	1549	1519 1552	1522 1555	1558	1562	1532 1565	1535 1568	1539 1572
480	1575	1578	1581	1585	1588	1591	1594	1598	1601	1604
490	1608	1611	1614	1617	1621	1624	1627	1631	1634	1637
500	1640	1644	1647	1650	1654	1657	1660	1663	1667.	1670

XXXIII.-METRES TO FEET.

				•		,				
Vietres	0	1	2	8	4	5	6	7	8	. 9
500	1640	1644	1647	1650	1654	1657	1660	1663	1667	1670
510	1673	1676	1680	1683	1686	1690	1693	1696	1699	1703
520	1706	1709	1713	1716	1719	1722	1726	.1729	1732	1736
580 540	1739	1742	1745	1749	1752	1755	1759	1762	1765	1768 1801
1	1772	1775	1778	1782	1785	1788	1791	1795	1798	
550	1804	1808	1811	1814	1818	1821	1824	1827	1831	1834
560	1837	1841	1844	1847	1850	1854	1857	1860	1864	1867
570	1870	1873	1877	1880	1883	1886	1890	1893	1896	1900
580 590	1903 19 <b>3</b> 6	1906 1939	1909 1942	1913 1946	1916 1 <b>94</b> 9	1919 1952	1923 1955	1926 1959	1929 1962	19 <b>32</b> 1965
600	1969	1972	1975	1978	1982	1985	1988	1991	1995	1998
610	2001	2005	2008	2011	2014	2018	2021	2024	2028	2031
620	2034	2037	2041	2044	2047	2051	2054	2057	2060	2064
630	2067	2070	2073	2077	2080	2083	2087	2090	2093	2096
640	2100	2103	2106	2110	2113	2116	2119	2123	2126	2129
650	2133	2136	2139	2142	2146	2149	2152	2156	2159	2162
660	2165	2169	2172	2175	2178	2182	2185	2188	2192	2195
670	2198	2201	2205	2208	2211	2215	2218	2221	2224	2228
680	2231	2234	2238	2241	2244	2247	2251	2254	2257	2261
690	2264	2267	2270	2274	2277	2280	2283	2287	2290	2293
700	2297	2300	2303	2306	2310	2313	2316	<b>232</b> 0	2323	2326
710	2329	2333	2336	2339	2343	2346	2349	2352	2356	2359
720	2362	2365	2369	2372	2375	2379	2382	2385	2388	2392
780	2395	2398	2402	2405	2408 2441	2411 2444	2415	2418	2421 2454	2425
740	2428	2431	2434	2438	2441	2444	2448	2451		2457
750	2461	2464	2467	2470	2474	2477	2480	2484	2487	2490
760	2493	2497	<b>25</b> 00	2503	2507	2510	2513	2516	2520	2523
770	2526	2530	2533	2536	2539	2543	2546	2549	2553	2556
780 790	2559 2592	2562 2595	2566 2598	2569 2602	2572 2605	2575 2608	2579 2612	2582 2615	2585 . 2618	2589 2621
		l			<b>[</b>					
800	2625	2628	2631	2635	2638	2641	2644	2648	2651	2654
810	2657	2661	2664	2667	2671	2674	2677	2680	2684	2687
820 830	2690 2723	2694 2726	2697 2730	2700 2733	2703 2736	2707 2740	2710 2743	2713 2746	$2717 \\ 2749$	2720 2753
840	2756	2759	2762	2766	2769	2772	2776	2779	2782	2785
850	2789	2792	2795	2799	2802	2805	2808	2812	2815	2818
860	2822	2825 2858	2828	2831	2835	2838 2871	2841	2844	2848	2851 2884
870 880	2854 2887	2898 2890	2861 2894	2864 2897	2867 2900	2871 2904	2874 2907	2877 2910	2881 2913	2884 2917
890	2920	2923	2927	2930	2933	2936	2940	2943	2946	2949
900	2953	2956	2959	2663	2966	2969	2972	2976	2979	2982
910	2986	2989	2992	2995	2999	3002	3005	3009	3012	3015
920	<b>3</b> 018	3022	3025	3028	3032	3035	3038	3041	3045	3048
930	3051	3054	3058	3061	3064	3068	3071	3074	3077	3081
940	3084	3087	3091	3094	3097	3100	3104	3107	3110	3114
950	3117	3120	<b>3</b> 123	3127	3130	3133	3136	3140	3143	3146
960	3150	3153	3156	3159	3163	3166	3169	3173	3176	3179
970	3182	3186	3189	3192	3196	3199	3202	3205	3209	3212
980	3215	3219	3222	3225	3228	3232	3235	3238	3241	3245
990	3248	3251	3255 3287	3258	3261	3264	3268	3271	3274	3278 331
1000	3281	3284	3201	3291	3294	3297	3301	3304	1 2001	/ 00.
				1	L	1				

XXXIII.-METRES TO FEET.

Metres	0	1	2	8	4	5	6	7	8	9
1000	2001	0004	0007	0001	2224					
1010	3281	3284	3287	3291	3294	3297	3301	3304	3307	3310
1020	3314 3346	3317	3320	3324	3327	3330	3333	3337	3340	3343
1080	3379	3350 3383	3353 3386	3356	3360	3363	3366	3369	3373	3376
1040	3412	3415		3389	3392	3396	3399	3402	3406	3409
1010	0712	9419	3419	3422	3425	3428	3 <b>432</b>	3435	3438	3442
1050	3445	3448	3451	3455	3458	3461	3465	3468	. 3471	3474
1060	3478	3481	3484	<b>34</b> 88	3491	3494	3497	3501	3504	3507
1070	3511	3514	3517	3520	3524	3527	<b>35</b> 30	3533	3537	3540
1080	3543	3547	3550	3553	3556	3560	3563	3566	3570	3573
1090	3576	3579	3583	3586	3589	3593	3596	3599	3602	3606
1100	3609	3612	3615	3619	3622	3625	3629	3632	3635	3638
1110	3642	3645	3648	3652	3655	3658	3661	3665	3668	3671
1120	3675	3678	3681	3684	3688	3691	3694	3698	3701	3704
1180	3707	3711	3714	3717	3720	3724	3727	3730	3734	3737
1140	3740	3743	3747	3750	3753	3757	3760	3763	3766	3770
1150	3773	3776	3779	3783	3786	3789	3792	3796	3799	3802
1160	3806	3809	3812	3816	3819	3822	3825	3829	3832	3835
1170	3839	3842	3845	3848	3852	3855	3858	3862	3865	3868
1180	3871	3875	3878	3881	3885	3888	3891	3894	3898	3901
1190	3904	3907	3911	3914	3917	3921	3924	3927	3930	3934
1200	3937	3940	3944	3947	3950	3953	3957	2020	0000	0007
1210	3970	3973	3976	3980	3983	3986	3990	3960	3963	3967
1220	4003	4006	4009	4012	4016	4019	4022	3993	3996	3999
1230	4035	4039	4042	4045	4049	4052	4055	4026 4058	4029	4032
1240	4068	4072	4075	4078	4081	4085	4088	4091	4062 4095	4065 4098
1250	4101	4104	4108	4111	4114	4117	4121	4124	4107	
1260	4134	4137	4140	4144	4147	4150	4154	4124	4127	4131
1270	4167	4170	4173	4177	4180	4183	4186	4190	4160 4193	4163 4196
1280	4199	4203	4206	4209	4213	4216	4219	4222	4226	
1290	4232	4236	4239	4242	4245	4249	4252	4255	4259	4229 4262
1800	4265	4268	4272	4275	4278	4282	4285	4000	4007	4005
1810	4298	4301	4304	4308	4311	4314	4318	4288	4291	4295
1320	4331	4334	4337	4341	4344	4347	4350	4321 4354	4324	4327
1830	4364	4367	4370	4373	4377	4380	4383	4386	4357 4390	4360
1840	4396	4400	4403	4406	4409	4413	4416	4419	4390 4423	4393 4426
1850	4429	4432	4436	4439	4442	4446	4440	4450		
1860	4462	4465	4469	4472	4475	4478	4449 4482	4452	4455	4459
1870	4495	4498	4501	4505	4508	4511	4514	4485 4518	4488	4491
1880	4528	4531	4534	4537	4541	4544	4547	4551	4521	4524
1890	4560	4564	4567	4570	4574	4577	4580	4583	4554 4587	4557 4590
1400	4593	4596	4600	4603	4606	4610	4810			
1410	4626	4629	4633	4636	4639	4610 4642	4 <b>6</b> 13	4616	4619	4623
1420	4659	4662	4665	4669	4672	4675	4646 4678	4649	4652	4656
1480	4692	4695	4698	4701	4705	4708	4678 4711	4682	4685	4688
1440	4724	4728	4731	4734	4738	4741	4711	4715 4747	4718 4751	4721 4754
1450	4757	4761	4764	4767	4770	477.1				
1460	4790	4793	4797	4767 4800	4770	4774	4777	4780	4783	4787
1470	4823	4826	4829	4833	4803 4836	4806 4839	4810	4813	4816	4820
1480	4856	4859	4862	4866	4869	4872	484 <b>3</b> 4875	4846	4849	4852
1490	4888	4892	4895	4898	4902	4905		4879	4882	4885
	4921	4925	4928	4931	4902	4905	4908 4941	4911 4944	4915 4948	4918
1500										4951

### XXXIII.-METRES TO FEET.

<b>Metres</b>	0	1	*	8	4	5	6	7	8	9
1500	4921	4925	4928	4931	4934	4938	4941	4944	4948	4951
1510	4954	4957	4961	4964	4967	4970	4974	4977	4980	4984
1520	4987	4990	4993	4997	5000	5003	5007	5010	5013	5016
1580	5020	5023	5026	5030	5033	5036	5039	5043	5046	5049
1540	5053	5056	5059	5062	5066	5069	5072	5075	5079	5082
1550	5085	5089	5092	5095	5098	5102	5105	5108	5112	5115
1560	5118	5121	5125	5128	5131	5135	5138	5141	5144	5148
1570	5151	5154	5157	5161	5164	5167	5171	5174	5177	5180
1580	5184	5187	5190	5194	5197	5200	5203	5207	5210	5213
1590	5217	5220	5223	5226	5230	5233	5236	5240	5243	5246
1600	5249	5253	5256	5259	5262	5266	5269	5272	5276	5279
1610	5282	5285	5289	5292	5295	5299	5302	5305	5308	5312
1620	5315	5318	5322	5325	5328	5331	5335	5338	5341	5345
1680	5348	5351	5354	5358	5361	5364	5367	5371	5374	5377
1640	5381	5384	5387	5390	5394	5397	5400	5404	5407	5410
1650	5413	5417	5420	5423	5427	5430	5433	5436	5440	5443
1660	5446	5449	5453	5456	5459	5463	5466	5469	5472	5476
1670	5479	5482	5486	5489	5492	5495	5499	5502	5505	5509
1680	5512	5515	5518	5522	5525	5528	5532	5535	5538	5541
1690	5545	5548	5551	5554	5558	5561	5564	5568	5571	5574
1700	5577	5581	5584	5587	5591	5594	5597	5600	5604	5607
1710	5610	5614	5617	5620	5623	5627	5630	5633	5637	5640
1720	5643	5646	5650	5653	5656,	5659	5663	5666	5669	5673
1780	5676	5679	5682	5686	5689	5692	5696	5699	5702	5705
1740	5709	5712	5715	5719	5722	5725	5728	5732	5735	5738
1750	5741	5745	5748	5751	5755	5758	5761	5764	5768	5771
1760	5774	5778	5781	5784	5787	5791	5794	5797	5801	5804
1770	5807	5810	5814	5817	5820	5824	5827	5830	5833	5837
1780	5840	5843	5846	5850	5853	5856	5860	5863	5866	5869
1790	5873	5876	5879	5883	5886	5889	5892	5896	5899	5902
1800	5906	5909	5912	5915	5919	5922	5925	5928	5932	5935
1810	5938	5942	5945	5948	5951	5955	5958	5961	5965	5968
1820	5971	5974	5978	5981	5984	5988	5991	5994	5997	6001
1880	6004	6007	6011	6014	6017	6020	6024	6027	6030	6033
1840	6037	6040	6043	6047	6050	6053	6056	6060	6063	6066
1850	6070	6073	6076	6079	6083	6086	6089	6093	6096	6099
1860	6102	6106	6109	6112	6116	6119	6122	6125	6129	6132
1870	6135	6138	6142	6145	6148	6152	6155	6158	6161	6165
1880	6168	6171	6175	6178	6181	6184	6188	6191	6194	6198
1890	6201	6204	6207	6211	6214	6217	6220	6224	6227	6230
1900	6234	6237	6240	6243	6247	6250	6253	6257	6260	6263
1910	6266	6270	6273	6276	6280	6283	6286	6289	6293	6296
1920	6299	6303	6306	6309	6312	6316	6319	6322	6325	6329
1980	6332	6335	6339	6342	6345	6348	6352	6355	6358	6361
1940	6365	6368	6371	6375	6378	6381	6385	6388	6391	6394
1950 1960 1970 1980 1990 2000	6398 6430 6463 6496 6529 6562	6401 6434 6467 6499 6532 6565	6404 6437 6470 6503 6535 6568	6408 6440 6473 6506 6539 6572	6411 6444 6476 6509 6542 6575	6414 6447 6480 6512 6545 6578	6417 6450 6483 6516 6549 6581	6421 6453 6486 6519 6552 6585	6424 6457 6490 6522 6555 6588	6427 6460 6493 6599 61

#### XXXIII.-METRES TO FEET.

letres	0	1	æ	8	4	5	6	7	8	9
2000	6562	6565	6568	6572	6575	6578	<b>6</b> 581	6585	6588	6591
2010	6595	6598	6601	6604	6608	6611	6614	6617	6621	6624
2020	6627	6630	6634	.6637	6640	6643	6647	6650	6654	6657
2080	6660	6663	6667	6670	6673	6677	6680	6683	6686	6690
2040	6693	6696	6699	6703	6706	6709	6713	6716	6719	6722
2050	6726	6729	6732	6736	6739	6742	6745	6749	6752	6755
2060	6759	6762	6765	6768	6772	6775	6778	6782	6785	6788
2070	6791	6795	6798	6801	6804	6808	6811	6814	6818	6821
2080	6824	6827	6831	6834	6837	6841	6844	6847	6850	6854
2090	6857	6860	6864	6867	6870	6873	6877	6880	6883	6887
2100	6890	6893	6896	6900	6903	6906	6909	6913	6916	6919
2110	6923	6926	6929	6932	6936	6939	6942	6946	6949	6952
2120	6955	6959	6962	6965	6969	6972	6975	6978	6982	6985
2180	6988	6991	6995	6998	7001	7005	7008	7011	7014	7018
2140	7021	7024	7028	7031	7034	7037	7041	7044	7047	7051
2150	7054	7057	7060	7064	7067	7070	7074	7077	7080	7083
2160	7087	7090	7093	7096	7100	7103	7106	7110	7113	7116
2170	7119	7123	7126	7129	7133	7136	7139	7142	7146	7149
2180	7152	7156	7159	7162	7165	7169	7172	7175	7179	7182
2190	7185	7188	7192	7195	7198	7201	7205	7208	7211	7215
2200	7218	7221	7224	<b>722</b> 8	7231	7234	7238	7241	7244	7247
2210	7251	7254	7257	7261	7264	7267	7270	7274	7277	7280
2220	7283	7287	7290	7293	7297	7300	7303	7306	7310	7313
2280   2240	7316	7320	7323	7326	7329	7333	7336	7339	7343	7346
2240	7349	7352	7356	7359	7362	7366	7369	7372	7375	7379
2250	7382	7385	7388	7392	7395	7398	7402	7405	7408	7411
2260	7415	7418	7421	7425	7428	7431	7434	7438	7441	7444
2270	7448	7451	7454	7457	7461	7464	7467	7470	7474	7477
2280	7480	7484	7487	7490	7493	7497	7500	7503	7507	7510
2290	7513	7516	7520	7523	7526	7530	7533	7536	7539	7543
2800	7546	7549	7553	7556	7559	7562	7566	7569	7572	<b>75</b> 75
2310	7579	7582	7585	7589	7592	7595	7598	7602	7605	7608
2320	7612	7615	7618	7621	7625	7628	7631	7635	7638	7641
2330   2340	7644	7648	7651	7654	7658	7661	7664	7667	7671	7674
2040	7677	7680	7684	7687	7690	7694	7697	7700	7703	7707
2850	7710	7713	7717	7720	7723	7726	7730	7733	7736	7740
2360	7743	7746	7749	7753	7756	7759	7762	7766	7769	7772
2370	7776	7779	7782	7785	7789	7792	7795	7799	7802	7805
2380   2390	7808 7841	7812 7845	7815 7848	7818 7851	7822 7854	7825 7858	7828 7861	7831 7864	7835 7867	7838 7871
2400   2410	7874 7907	7877 7910	$\begin{array}{c} 7881 \\ 7913 \end{array}$	7884 7917	7887 7920	7890 7923	7894 7927	7897 7930	7900	7904 7936
2420	7940	7910	7913 7946	7950	7953	7923 7956	7959	7963	7933 7966	7950 7969
2480	7972	7976	7979	7982	7986	7989	7992	7995	7999	8002
2440	8005	8009	8012	8015	8018	8022	8025	8028	8032	8035
2450	8038	8041	8045	8048	8051	8054	8058	8061	8064	806€
2460	8071	8074	8077	8081	8084	8087	8091	8094	8097	810 <b>C</b>
2470	8104	8107	8110	8114	8117	8120	8123	8127	8130	8132
2480	8137	8140	8143	8146	8150	8153	8156	8159	8163	816€
2490	8169	8173	8176	8179	8182	8186	8189	8192	8196	8199
2500	8202	8205	8209	8212	8215	8219	8222	8225	8228	8232

XXXIII .- METRES TO FEET.

=										
:es	0	1	*	8	4	5	6	7	8	9
ю	8202	8205	8209	8212	0015	0010	8222	0005	8228	8232
ŏ	8235	8238	8241	8245	8215 8248	8219 8251	8255	8225 8258	8261	8264
ŏ	8268	8271	8274	8278	8281	8284	8287	8291	8294	8297
ŏ	8301	8304	8307	8310	8314	8317	8320	8324	8327	8330
:0	8333	8337	8340	8343	8346	8350	8353	8356	8360	8363
<b>i0</b>	8366	8369	8373	8376	8379	8383	8386	8389	8392	8396
10	8399	8402	8406	8409	8412	8415	8419	8422	8425	8429
0	8432	8435	8438	8442	8445	8448	8451	8455	8458	8461
(O)	8465 8497	8468 8501	8471 8504	8474 8507	8478 8511	8481 8514	8484 8517	8488 8520	8491 8524	8494 8527
Ю	8530	8533	8537	8540	8543	8547	8550	8553	8556	8560
ě	8563	8566	8570	8573	8576	8579	8583	8586	8589	8593
iŏ	8596	8599	8602	8606	8609	8612	8616	8619	8622	8625
10	8629	. 8632	8635	8638	8642	8645	8649	8652	8655	8658
:0	8661	8665	8668	8671	8675	8678	8681	8684	8688	8691
0	8694	8698	8701	8704	8707	8711	8714	8717	8721	8724
10	8727	8730	8734	8737	8740	8743	8747	8750	8753	8757
0	8760	8763	8766	8770	8773	8776	8780	8783	8786	8789
10 10	8793	8796	8799	8803	8806	8809	8812	8816	8819	8822 8855
עי	8825	8829	8832	8835	8839	8842	8845	8848	8852	
Ю	8858	8862	8865	8868	8871	8875	8878	8881	8885	8888
.0	8891	8894	8898	8901	8904	8908	8911	8914	8917	8921
10	8924	8927 8960	8930	8934	8937	8940	8944	8947	8950	8953
;0 :0	8957 8990	8993	8963 8996	8967 8999	8970 9003	8973 9006	8976 9009	8980 9012	8983 9016	8986 9019
<b>;0</b>	9022	9026	9029	9032	9035	9039	9042	9045	9049	9052
ŏ	9055	9058	9062	9065	9068	9072	9075	9078	9081	9085
Ŏ	9088	9091	9095	9098	9101	9104	9108	9111	9114	9117
10	9121	9124	9127	9131	9134	9137	9140	9144	9147	9150
10	9154	9157	9160	9163	9167	9170	9173	9177	9180	9183
Ю	9186	9190	9193	9196	9200	9203	9206	9209	9213	9216
.0	9219	9222	9226	9229	9232	9236	9239	9242	9245	9249
10	9252	9255	9259	9262	9265	9268	9272	9275	9278	9282
;0 :0	9285 9318	9288 9321	9291 9324	9295 9327	9298 9331	9301 9334	930 <del>4</del> 9337	9308 9341	9311 9344	9314 9347
<b>i0</b>	9350	9354	9357	9360	9364	9367	9370	9373	9377	9380
Ö	9383	9387	9390	9393	9396	9400	9403	9406	9409	9413
ŏ	9416	9419	9423	9426	9429	9432	9436	9439	9442	9446
ΙŎ	9449	9452	9455	9459	9462	9465	9469	9472	9475	9478
10	9482	9485	9488	9492	9495	9498	9501	9505	9508	9511
ю	9514	9518	9521	9524	9528	9531	9534	9537	9541	9544
.0	9547	9551	9554	9557	9560	9564	9567	9570	9574	9577
10	9580	9583	9587	9590	9593	9596	9600	9603	9606	9610
90	9613	9616	9619	9623	9626	9629	9633	9636	9639	9642
:0	9646	9649	9652	9656	9659	9662	9665	9669	9672	9675
0	9679	9682	9685	9688	9692	9695	9698	9701	9705	9708
10	9711	9715	9718	9721	9724	9728	9731	9734	9738	9741
0	9744	9747	9751	9754	9757	9761	9764 9797	9767 9800	9770 9803	9774 9806
0	9777 9810	9780 9813	9783 9816	9787 9820	9790 9823	9793 9826	9829	9833	9836	98011
ŏ	9843	9846	9849	9852	9856	9859	9862	9866	6986	1 %
)	/ 55.00				3300	1	\	\	\	$\overline{7}$

XXXIII.-METRES TO FEET.

Metres	0	1	22	8	4	5	6	7	8	9
8000	9843	9846	<b>984</b> 9	9852	9856	9859	9862	9866	9869	9872
8010	9875	9879	9882	9885	9888	9892	9895	9898	9902	9905
8020	9908	9911	9915	9918	9921	9925	9928	9931	9934	9938
3030	9941	9944	9948	9951	9954	9957	9961	9964	9967	9971
8040	9974	9977	9980	9984	9987	9990	9993	9997	10000	10003
8050	10007	10010	10013	10016	10020	10023	10026	10030	10033	10036
3060	10039	10043	10046	10049	10053	10056	10059	10062	10066	10069
8070	10072	10075	10079	10082	10085	10089	10092	10095	10098	10102
8080	10105	10108	10112	10115	10118	10121	10125	10128	10131	10135
8090	10138	10141	10144	10148	10151	10154	10158	10161	10164	10167
8100	10171	10174	10177	10180	10184	10187	10190	10194	10197	10200
8110	10203	10207	10210	10213	10217	10220	10223	10226	10230	10233
3120	10236	10240	10243	10246	10249	10253	10256	10259	10263	10266
8180	10269	10272	10276	10279	10282	10285	10289	10292	10295	10299
8140	10302	10305	10308	10312	10315	10318	10322	10325	10328	10331
8150	10335	10338	10341	10345	10348	10351	10354	10358	10361	10364
8160	10367	10371	10374	10377	10381	10384	10387	10390	10394	10397
8170	10400	10404	10407	10410	10413	10417	10420	10423	10427	10430
8180	10433	10436	10440	10443	10446	10450	10453	10456	10459	10463
8190	10466	10469	10472	10476	10479	10482	10486	10489	10492	10495
3200	10499	10502	10505	10509	10512	10515	10518	10522	10525	10528
3210 3210	10532	10535	10538	10541	10545	10548	10551	10554	10558	10561
8220	10564	10568	10553	10574	10577	10581	10584	10587	10591	10594
3230	10597	10600	10604	10607	10610	10614	10617	10620	10623	10627
3240 3240	10630	10633	10637	10640	10643	10646	10650	10653	10656	10659
8250	10663	10666	10669	10673	10676	10679	10682	10686	10689	10692
8260	10696	10699	10702	10705	10709	10712	10715	10719	10722	10725
3270 3270	10728	10732	10735	10738	10742	10745	10718	10751	10755	10758
3210 3280	10761	10764	10768	10733	10774	10778	10781	10784	10787	10791
3290 3290	10794	10797	10801	10804	10807	10810	10781	10734	10820	10824
9900	10827	10830	10833	10837	10840	10843	10846	10850	10853	10856
3300	10827	10863	10866	10869	10873	10876	10879	10883	10886	10889
8810	10892	10896	10899	10903	10906	10909	10912	10915	10919	10922
3320	10925	10929	10932	10935		10942	10912	10913	10919	10922
8880 8840	10923	10929	10952	10968	10938 10971	10974	10943	10948	10984	10988
	10001	10994	10997	11001	11004	11007	11011	11014	11017	11000
8850	$10991 \\ 11024$	11027	11030	11001	11004	11007 11040	11011	11014	11017 11050	11020 11053
8860	11024	11027		11034	11037		11043	11047		
8370			11063	11066	11070	11073	11076	11079	11083	11086
3380	11089	11093	11096	11099	11102	11106	11109	111112	11116	11119
8890	11122	11125	11129	11132	11135	11138	11142	11145	11148	11152
3400	11155	11158	11161	11165	11169	11171	11175	11178	11181	11184
8410	11188	11191	11194	11198	11201	11204	11207	11211	11214	11217
8420	11221	11224	11227	11230	11234	11237	11240	11243	11247	11250
3430	11253	11257	11260	11263	11266	11270	11273	11276	11280	11283
8440	11286	11289	11293	11296	11299	11303	11306	11309	11312	11316
8450	11319	11322	11325	11329	11332	11335	11339	11342	11345	11348
8460	11352	11355	11358	11362	11365	11368	11371	11375	11378	11381
3470	11385	11388	11391	11394	11398	11401	11404	11408	11411	11414
	11417	11421	11424	11427	11430	11434	11437	11440	11444	11447
8480	11450	11453	11457	11460	11463	11467	11470	11473	11476	11480
<b>8490</b> <b>3500</b>	11483	11486	11490	11493	11496	11499	11503	11506	11509	11513

XXXIII.-METRES TO FEET.

=										
·es	0	1	*	8	4	. 5	. 6	7	8	9
0	11483	11486	11490	11493	11496	11499	11503	11506	11509	11513
ŏ	11516	11519	11522	11526	11529	11532	11535	11539	11542	11545
ŏ	11549	11552	11555	11558	11562	11565	11568	11572	11575	11578
0	11581	11585	11588	11591	11595	11598	11601	11604	11608	11611
0	11614	11617	11621	11624	11627	11631	11634	11637	11640	11644
0	11647	11650	11654	11657	11660	11663	11667	11670	11673	11677
0	11680	11683	11686	11690	11693	11696	11700	11703	11706	11709
0	11713	11716	11719	11722	11726	11729	11732	11736	11739	11742
0	11745	11749	11752	11755	11759	11762	11765	11768	11772 11805	11775 11808
0	11778	11782	11785	11788	11791	11795	11798	11801	11000	11000
0	11811	11814	11818	11821	11824	11827	11831	11834	11837	11841
Õ	11844	11847	11850	11854	11857	11860	1\$864	11867	11870	11873
0	11877	11880	11883	11887	11890	11893	11896	11900	11903	11906
0	11909	11913	11916	11919	11923	11926	11929	11932	11936	11939
0	11942	11946	11949	11952	11955	11959	11962	11965	11969	11972
0	11975	11978	11982	11985	11988	11992	11995	11998	12001	12005
0	12008	12011	12014	. 12018	12021	12024	12028	12031	12034	12037
0	12041	12044	12047	12051	12054	12057	12060	12064	12067	12070
0	12074	12077	12080	12083	12087	12090	12093	$12096 \\ 12129$	12100 12133	$12103 \\ 12136$
0	12106	12110	12113	12116	12119	12123	12126	12128	12133	12130
0	12139	12142	12146	12149	12152	12156	12159	12162	12165	12169
0	12172	12175	12179	12182	12185	12188	12192	12195	12198	12201
0	12205	12208	12211	12215	12218	12221	12224	12228	12231	12234
0	12238	12241	12244	12247	12251	12254	12257	12261	12264	12267
0	12270	12274	12277	12280	12284	12287	12290	12293	12297	12300
0	12303	12306	12310	12313	12316	12320	12323	12326	12329	12333
0	12336	12339	12343	12346	12349	12352	12356	12359	12362	12366
0	12369	12372	12375	12379	12382	12385	12388	12392	12395	12398
0	12402	12405	12408	12411	12415	12418	12421	12425	12428	12431
0	12434	12438	12441	12444	12448	12451	12454	12457	12461	12464
0	12467	12471	12474	12477	12480	12484	12487	12490	12493	12497
0	12500	12503	12507	12510	12513	12516	12520	12523	12526	12530
0	12533	12536	12539	12543	12546	12549	12553	12556	12559	12562
0	12566	12569	12572	12576	12579	12582	12585	12589	12592	12595
0	12598	12602	12605	12608	12612	12615	12618	12621	12625	12628
)	12631	12635	12638	12641	12644	12648	12651	12654	12658	12661
)	12664	12667	12671	12674	12677	12680	12684	12687	13690	12694
<b>j</b>	12697	12700	12703	12707	12710	12713	12717	12720	12723	12726
)	12730	12733	12736	12740	12743	12746	12749	12753	12756	. 12759
)	12763	12766	12769	12772	12776	12779	12782	12785	12789	12792
)	12795	12799	12802	12805	12808	12812	12815	12818	12822	12825
)	12828	12831	12835	12838	12841	12845	12848	12851	12854	12858
)	12861	12864	12867	12871		12877	12881	12884	12887	12890
)	12894	12897	12900	12904	12907	12910	12913	12917	12920	12923
)	12927	12930	12933	12936	12940	12943	12946	12950	12953	12956
)	12959	12963	12966	12969	12972	12976	12979	12982	12986	12989
)	12992	12995	12999	13002	13005	13009	13012	13015	13018	13022
	13025	13028	13032	13035	13038	13041	13045	13048	13051	13055
)	13058	13061	13064	13068	13071	13074	13077	13081	13084	13087
)	13091	13094	13097	13100	13104	13107	13110	13114	13117	13190
)	13123	13127	13130	13133	13137	13140	13143	13146	13150	1'
'	13123	13127	13130	13133	1313/	13140	15143	13140	19190	7,

105

# TABLE XXXIV.—MILES TO KILOMETRES. 1 mile = 1.60933904 kilometres. (Original.)

XXXIV.-MILES TO KILOMETRES.

				l		1	Ī	1	1	
<b>8.</b>	0	1	<b>*</b>	8	4	5	6	7	8	9
	885	887	888	. 890	892	893	895	896	898	900
)	901	903	904	906	908	909	911	912	914	916
	917	919	921	922	924	$\begin{array}{c} 905 \\ 925 \end{array}$	927	929	930	932
	933	935	937	938	940	941	943	945	946	948
1	950	951	953	954	956	958	959	961	962	964
)	966	967	969	970	972	974	975	977	978	980
1	982	983	985	987	988	990	991	993	995	996
1	998	999	1001	1003	1004	1006	1007	1009	1011	1012
)	1014	1015	1017	1019	1020	1022	1024	1025	1027	1028
1	1030	1032	1033	1035	1036	1038	1040	1041	1043	1044
,	1046	1048	1049	1051	1053	1054	1056	1057	1059	1061
H	1062	1064	1065	1067	1069	1070	1072	1073	1075	1077
1	1078	1080	1081	1083	1085	1086	1088	1090	1091	1093
1	1094	1096	1098	1099	1101	1102	1104	1106	1107	1109
1	1110	1112	1114	1115	1117	1118	1120	1122	1123	1125
١							1			***
1	1127	1128	1130	1131	1133	1135	1136	1138	1139	1141
١	1143	1144	1146	1147	1149	1151	1152	1154	1156	1157
1	1159	1160	1162	1164	1165	1167	1168	1170	1172	1173
1	1175	1176	1178	1180	1181	1183	1184	1186	1188	1189
١	1191	1193	1194	1196	1197	1199	1201	1202	1204	1205
	1207	1209	1210	1212	1213	1215	1217	1218	1220	1221
ł	1223	1225	1226	1228	1230	1231	1233	1234	1236	1238
١	1239	1241	1242	1244	1246	1247	1249	1250	1252	1254
1	1255	. 1257	1259	1260	1262	1263	1265	1267	1268	1270
1	1271	1273	1275	1276	1278	1279	1281	1283	1284	1286
	1287	1289	1291	1292	1294	1296	1297	1299	1300	1302
1	1304	1305	1307	1308	1310	1312	1313	1315	1316	1318
1	1320	1321	1323	1324	1326	1328	1329	1331	1333	1334
ı	1336	1337	1339	1341	1342	1344	1345	1347	1349	1350
1	1352	1353	1355	1357	1358	1360	1362	1363	1365	1366
ŀ	1368	1370	1371	1373	1374	1376	1378	1379	1381	1382
1	1384	1386	1387	1389	1390	1392	1394	1395	1397	1399
I	1400	1402	1403	1405	1407	1408	1410	1411	1413	1415
1	1416	1418	1419	1421	1423	1424	1426	1427	1429	1431
١	1432	1434	1436	1437	1439	1440	1442	1444	1445	1447
	1448	1450	1452	1453	1455	1456	1458	1460	1461	1463
1	1464	1466	1468.	1469	1471	1473	1474	1476	1477	1479
1	1481	1482	1484	1485	1487	1489	1490	1492	1493	1495
ı	1497	1498	1500	1502	1503	1505	1506	1508	1510	1511
	1513	1514	1516	1518	1519	1521	1522	1524	1526	1527
	1529	1530	1532	1534	1535	1537	1539	1540	1542	1543
1	1545	1547	1548	1550	1551	1553	1555	1556	1558	1559
I	1561	1563	1564	1566	1567	1569	1571	1572	1574	1576
	1577	1579	1580	1582	1584	1585	1587	1588	1590	1592
l	1593	1595	1596	1598	1600	1601	1603	1605	1606	1608
	1609	1611	1613	1614	1616	1617	1619	1621	1622	1624
<u>:</u>	1000	1609	600	00 98	56 11	000 17	703 1	6000	25749	
	2000	3219							27359	
	3000	4828				000 20			28968	
	4000	6437							30577	
		, 5101	100				140 2		~~~· II	

# TABLE XXXV.—STATUTE TO NAUTICAL MILES (KNOTS). 1 statute mile = .867554 nautical. (Original.)

Stat. Miles.	0	1	æ	8 .	4	5	6	7	8	9
0	0.0	0.8	1.7	2.6	3.5	4.3	5.2	6.1	6.9	7.8
10	8.7	9.5	10.4	11.3	12.1	13.0	13.9	14.7	15.6	16.5
20	17.4	18.2	19.1	20.0	20.8	21.7	22.6	23.4	24.3	25.2
30	26.0	26.9	27.8	28.6	29.5	30.4	31.2	32.1	33.0	33.8
40	34.7	35.6	36.4	37.3	38.2	39.0	39.9	40.8	41.6	42.5
50	43.4	44.2	45.1	46.0	46.8	47.7	48.6	49.5	50.3	51.2
60	52.1	52.9	53.8	54.7	55.5	56.4	57.3	58.1	59.0	59.9
70	60.7	61.6	62.5	63.3	64.2	65.1	65.9	66.8	67.7	68.5
80	69.4	70.3	71.1	72.0	72.9	73.7	74.6	75.5	76.3	77.2
90	78.1	78.9	79.8	80.7	81.6	82.4	83.3	84.2	85.0	85.9
100	86.8	87.6	88.5	89.4	90.2	91.1	92.0	92.8	93.7	94.6
110	95.4	96.3	97.2	98.0	98.9	99.8	100.6	101.5	102.4	103.2
120	104.1	105.0	105.8	106.7	107.6	108.4	109.3	110.2	111.0	111.9
130	112.8	113.6	114.5	115.4	116.3	117.1	118.0	118.9	119.7	120.6
140	121.5	122.3	123.2	124.1	124.9	125.8	126.7	127.5	128.4	129.3
150	130.1	131.0	131.9	\$32.7	133.6	134.5	135.3	136.2	137.1	137.9
160	138.8	139.7	140.5	141.4	142.3	143.1	144.0	144.9	145.7	146.6
170	147.5	148.4	149.2	150.1	151.0	151.8	152.7	153.6	154.4	155.3
180	156.2	157.0	157.9	158.8	159.6	160.5	161.4	162.2	163.1	164.0
190	164.8	165.7	166.6	167.4	168.3	169.2	170.0	170.9	171.8	172.6
200	173.5	174.4	175.2	176.1	177.0	177.8	178.7	179.6	180.5	181.3
210	182.2	183.1	183.9	184.8	185.7	186.5	187.4	188.3	189.1	190.0
220	190.9	191.7	192.6	193.5	194.3	195.2	196.1	196.9	197.8	198.7
230	199.5	200.4	201.3	202.1	203.0	203.9	204.7	205.6	206.5	207.3
240	208.2	209.1	209.9	210.8	211.7	212.6	213.4	214.3	215.2	216.0
250	216.9	217.8	218.6	219.5	220.4	221.2	222.1	223.0	223.8	224.7
260	225.6	226.4	227.3	228.2	229.0	229.9	230.8	231.6	232.5	233.4
270	234.2	235.1	236.0	236.8	237.7	238.6	239.4	240.3	241.2	242.0
280	242.9	243.8	244.7	245.5	246.4	247.3	248.1	249.0	249.9	250.7
290	251.6	252.5	253.3	254.2	255.1	255.9	256.8	257.7	258.5	259.4
300	260.3	261.1	262.0	262.9	263.7	264.6	265.5	266.3	267.2	268.1
310	268.9	269.8	270.7	271.5	272.4	273.3	274.1	275.0	275.9	276.7
320	277.6	278.5	279.4	280.2	281.1	282.0	282.8	283.7	284.6	285.4
330	286.3	287.2	288.0	288.9	289.8	290.6	291.5	292.4	293.2	294.1
340	295.0	295.8	296.7	297.6	298.4	299.3	300.2	301.0	301.9	302.8
350	303.6	304.5	305.4	306.2	307.1	308.0	308.8	309.7	310.6	311.5
360	312.3	313.2	314.1	314.9	315.8	316.7	317.5	318.4	319.3	320.1
370	321.0	321.9	322.7	323.6	324.5	325.3	326.2	327.1	327.9	328.8
380	329.7	330.5	331.4	332.3	333.1	334.0	334.9	335.7	336.6	337.5
390	338.3	339.2	340.1	340.9	341.8	342.7	343.6	344.4	345.3	346.2
		400 500 600 700 800 900	347.0 433.8 520.5 607.3 697.0 780.8	100 110 120 130 140	00   9 00   10 00   11	667.6 54.3 41.1 27.8 214.6	1500 1600 1700 1800 1900 2000	1301.3 1388.1 1474.8 1561.6 1648.4 1735.1	1 3 4	.

TABLE XXXVI.-LENGTH OF A DEGREE IN VARIOUS LATITUDES.

d. (in feet) -- 365491 cos. 1 -- 306 cos. 3 l.

(Original. See Davies & Peck. Dict. math. p. 163.)

===			(Original								
Lat.	Stat. m.	Naut. m.	Kil.	Lat.	Stat. m.	Naut. m.	Kil.	Lat.	Stat. m.	Naut. m.	Kil.
0	69.16	60.0	111.3	20	65.02	56.4	104.6	40	53.05	48 N	85.4
1	69.15		111.3	21	64.59		103.9	41	52.27		84.1
2	69.12		111.2	22	64.15	1	103.3	42	51.47		82.8
3	69.07		111.1	23	63.70		102.5	43	50.66		81.5
4	69.00		111.0	24	63.22		102.5	44	1	43.2	80.2
*	₩. <b>0</b> 0	<b>00.8</b>	111.0	27	00.22	J¥.0	101.7	**	10.00	40.2	00.2
5	68.90	59.8	110.9	25	62.72	54.4	100.9	45	48.99	42.5	78.9
6	68.79	59.7	110.7	26	62.20	54.0	100.1	46	48.13	41.7	77.5
7	68.65	59.6	110.5	27	61.66	53.5	99.2	47	47.25	41.0	76.1
8	68.50	59.4	110.2	28	61.11	53.0	98.3	48	46.36	40.2	74.6
9	68.32		109.9	29	60.54		97.4	49	45.46	39.4	73.2
10	68.12	59.1	109.6	<b>30</b>	59.94	52.0	96.5	50	44.54	38.6	71.7
11	67.90	<b>5</b> 8.9	109.3	<b>31</b>	59.33	51.5	95.5	51	43.61	37.8	70.2
12	67.66	58.6	108.9	32	58.71	50.9	94.5	52	42.67	37.0	68.7
18	67.40	58.4	108.5	33	58.06	50.4	93.4	53	41.71	36.2	67.1
14	67.12	58.2	108.0	34	57.40	49.8	92.3	<b>54</b>	40.74	35.3	65.6
15	00.00	FO 0	107 5	95	FA 50	40.0	01.0		00.70	04.5	
15	66.82		107.5	35	56.72		91.2	55	1	34.5	64.0
16	66.50		107.0	36	56.01		90.1	60	34.67	i	55.8
17	66.16		106.5	87	55.30		89.0	65	29.31		47.2
18	65.80		105.9	38	54.57		87.8	70	l	20.6	38.2
19	65.42		105.3	39	53.82		86.6	75	i .	15.6	28.9
20	65.02	56.4	104.6	40	53.05	46.0	85.4	80	12.05	10.4	19.4
			1		<u> </u>		<u> </u>		<u> </u>	<u> </u>	

## XXXVII-XLIII. MISCELLANEOUS TABLES.

#### TABLE XXXVII.-SUNSPOT NUMBERS.

(Wolf. Astronomische Mittheilungen.)

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1800	7	9	14	10	5	24	21	20	12	12	10	40	15
1	27	29	• 30	31	32	31	35	39	34	33	40	48	34
2	48	47	41	50	53	55	57	58	65	56	66	64	55
3	66	67	68	69	71	72	73	64	75	76	77	77	71
4	77	75	77	77	77	76	74	72	71	71	67	63	73
1805	61	59	56	46	39	49	47	46	44	43	41	40	48
6	39	30	28	34	26	26	31	29	28	27	25	24	29
7	12	12	10	18	10	10	13	12	6	8	3	0	9
8	0	4	0	12	9	12	7	8	12	5	11	12	8
9	7	9	1	2	2	8	0	0	0	0	0	0	2
1810	0	0	0	0	0	0	0	9	0	0	0	0	0
1	0	0	0	0	0	0	7	0	2	6	1	1	1
2	13	2	1	0	1	1	0	19	5	6	8	10	5
3	0	10	2	17	6	11	16	8	18	30	17	20	13
4	22	12	6	23	6	15	18	2	12	22	14	20	14
1815	19	32	26	32	10	56	35	47	32	33	37	65	35
6	26	69	74	59	44	44	39	28	49	56	38	31	46
7	36	55	107	26	19	40	47	45	36	25	36	24	41
8	35	19	22	36	53	36	28	31	27	33	13	26	30
9	34	21	4	20	18	36	34	26	15	28	25	31	24
1820	13	27	4	18	29	11	23	26	5	9	8	8	15
1	22	2	6	6	1	2	2	5	4	18	4	0	6
2	0	1	16	13	2	6	8	2	0	0	0	0	4
3	0	0	1	0	0	0	0	0	0	0	0	20	2
4	22	11	0	20	3	0	0	1	20	25	0	1	9
1825	5	16	15	0	15	15	31	25	16	14	12	22	16
6	18	18	38	24	32	37	52	40	19	51	38	64	36
7	34	46	56	46	56	57	43	54	50	57	48	46	49
8	53	64	65	61	89	98	54	76	50	35	57	47	62
9	43	49	72	98	68	76	91	77	50	61	67	56	67
1830 1 2 3 4	50 48 31 11 5	71 50 56 15 18	85 93 55 12 4	107 55 27 3 1	66 38 41 13 9	65 33 27 1 8	44 45 14 7 9	51 55 9 6 4	62 38 8 12 12	84 46 21 8 25	81 44 14 1 30	82 29 28 10 34	71 48 28
1835 6 7 8 9	8 89 188 145 108	24 108 176 85 102	20 98 135 141 78	62 143 138 127 62	44 111 11 <b>1</b> 138 54	33 125 158 94 55	60 117 163 108 85	59 108 134 79 131	101 95 96 74 133	95 137 124 91 91	100 121 107 77 69	78 206 130 80 64	125 136 108 86
1840	81	88	56	66	69	48	61	58	74	50	54	54	63
1	24	30	30	43	67	56	31	39	35	28	20	39	37
2	20	22	22	27	25	20	13	26	18	38	40	18	24
3	13	4	8	8	21	10	10	12	4	5	19	13	11
4	9	15	14	21	12	4	21	24	7	22	11	22	15
1845	26	44	43	57	48	31	31	32	30	41	39	60	40

## XXXVII-XLIII. MISCELLANEOUS TABLES.

XXXVII.—SUNSPOT NUMBERS.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
26	44	43	57	48	31	31	32	30	41	39	60	40
39	51	64	69	60	65	46	55	107	56	60	66	62
63	45	86	45	75	85	52	141	161	180	139	110	98
159	112	109	107	102	124	139	132	100	132	115	160	124
157	131	96	102	81	81	78	61	94	72	100	97	96
78	89	83	44	62	70	39	. 62	86	71	55	60	67
76	105	65	56	63	63	36	. 57	68	62	51	71	64
68	68	61	65	55	47	42	. 40	38	67	54	45	54
41	43	38	48	35	40	46	. 50	34	42	29	23	39
15	20	21	26	24	21	19	. 16	22	13	28	21	21
12 0 14 39 84	11 5 7 35 88	17 0 5 58 90	4 6 11 38 86	9 0 29 41 91	5 16 44 87	0 5 22 57 95	3 6 17 55 107	0 4 42 80 106	10 4 41 91 115	4 8 31 52 97	3 7 37 67 81	7 4 23 55 94
82	88	99	71	107	109	117	100	92	90	98	96	96
62	78	101	98	57	88	78	82	80	67	54	80	77
63	64	44	54	64	84	73.	62	67	42	51	41	59
48	57	66	41	54	41	33	48	. 22	40	38	41	44
58	47	66	36	41	58	55	55	28	34	58	29	47
49	39	40	29	34	34	27	38	22	17	25	13	31
32	38	25	18	13	16	9	13	7	14	9	2	16
0	1	9	5	3	2	5	5	10	14	9	25	7
16	16	26	37	27	31	29	34	44	62	59	68	37
61	59	53	41	104	108	59	80	81	59	77	104	74
77	115	159	160	176	136	132	154	136	146	148	130	139
88	125	143	162	146	92	103	110	80	89	105	90	111
80	120	88	102	108	110	105	93	115	104	112	84	102
87	107	98	76	48	45	67	68	48	47	55	49	66
61	64	46	32	45	38	68	61	28	34	29	29	45
15	22	34	29	12	24	12	15	2	13	18	10	17
14	15	31	2	5	2	15	9	10	14	10	8	11
24	9	12	16	21	13	6	6	16	7	14	2	12
3	6	8	0	6	6	0	0	5	1	4	0	3
1	1	0	6	2	5	8	11	6	12	13	7	6
24	28	20	19	24	34	22	48	66	43	31	30	32
36	53	52	52	44	60	77	58	53	64	55	47	54
45	69	68	96	64	45	45	40	58	59	84	42	60
61	47	43	82	32	76	81	46	53	84	84	76	64
92	87	87	76	66	51	53	56	62	48	37	47	63
43	72	50	55	73	84	66	50	40	39	33	22	52
30	26	57	44	31	27	30	17	21	9	0	12	25

#### XXXVII-XLIII. MISCELLANEOUS TABLES.

#### TABLE XXXVII.-LOCAL TIME TO STANDARD TIME.

(Original.)

Greenwich noon = 7 A. M. 75th meridian time = time given in this table for each longitude W. For longitude E. from Greenwich subtract the time by this table from 12, and that will give the P. M. local time of Greenwich noon.

	West	of 7	5th A	Ierid	ian.						Eas	t of ?	75th	Mer	idian
			Lori					10		. 8		L	cal T	ime.	
0	1	2	3	4	5	6	0	15'	30	45	7 A. M.	8 A. M.	9 A. M.	10 A. M.	11 A. M.
165°	150°	135°	120°	105°	90°	75°	60 m	59 **	58 "	57 m	60°	45°	30°	15°	00
166	151	136	121	106	91	76	56	55	54	53	61	46	31	16	1-
167	152	137	122	107	92	77	52	51	50	49 ,	62	47	32	17	2
168	153	138	123	108	93	78	48	47	46	45	63	48	33	18	3
169	154	139	124	109	94	79	44	43	42	41	64	49	34	19	4
170	155	140	125	110	95	80	40	39	38	37	65	50	35	20	5
171	156	141	126	111	96	81	36	35	34	33	66	51	36	21	6
172	157	142	127	112	97	82	32	31	30	29	67	52	37	22	7
173	158	143	128	113	98	83	28	27	26	25	68	53	38	23	8
1.74	159	144	129	114	99	84	24	23	22	21	69	54	39	24	9
175	160	145	130	115	100	85	20	19	18	17	70	55	40	25	10
176	161	146	131	116	101	86	16	15	14	13	71	56	41	26	11
177	162	147	132	117	102	87	12	11	10	9	72	57	42	27	12
178	163	148	133	118	103	88	8	7	6	5	73	58	43	28	13
179	164	149	134	119	104	89	4	3	2	1	74	59	44	29	14

#### EXAMPLE.

To Find Local Time of Greenwich Noon in Longitude 49° 26' West of Greenwich.

Look for degree of longitude 49 and we find 8 A. M at the head. 26' of longitude in the center table gives opposite 49°: 42<sup>m</sup>; hence local time of Greenwich noon in longitude 49° 26' W. is 8:42 A. M.

To Find Greenwich Time of Local Noon in Longitude 95° 40' W.

Greenwich noon = 5:37 A. M. Subtract 5:37 from 12, and we have 6:23 P. M.-Greenwich time of local noon.

To Find Local Time of Any Greenwich Time.

Find 2:35 P. M. Greenwich time in longitude 111° 35′ W. Greenwich noon = 4:34 A. M. local time. 2:35 P. M. Greenwich time would be 2 hours 35 minutes later, OF 7:9 A. M. local time.

To Find Greenwich Time of Any Local Time.

Find Greenwich time of 4:37 P. M. local time in 98° 8′ longitude W. Local time of Greenwich noon = 5:27 A. M.; 4:37 P. M. is 11 hours 10 minutes later, or 11:10 P. The Greenwich time.

To use this table for any other meridian than Greenwich, substitute for "Greenwich noon" its time at the meridian desired.

Given 7 A. M. Eastern Time, to find its Local Time in Longitude 112° 48' W.

Over 112 we find 4, and opposite that for 45' we have 29. Hence 7 A. M. (Easter 29 A. M. (local) in longitude 112° 48' W.

#### XXXIX.-TIME OF SUNRISE.

	8	E E	8883 8883 884 884	2000044 2022222	2228 2348 2448 2448	422244 455448	4774 88 87 87 87 87 87 87	
	. 22	р. m.	888827 3884 30	200004 818823	4000000 raga	0 4 8 2 2 2 8	45566 384483	88 88 8 8 33 8 45 45
	.92	р. m.	8 8 8 27 7 7 4 25 25 10 10 35 5 4 10 10 10 10 10 10 10 10 10 10 10 10 10	<b>\$</b> \$	**************************************	000444 1884023	იიიიი 482°84	8 2 7 2 8 8 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
	.42	b. m.	888777 844 846 85 85 85 85 85 85 85 85 85 85 85 85 85	60000000000000000000000000000000000000	44558 844388	8242288	იიიიიი დღლიემ	7 1 20 7 20 7 20 7 26 8 9 8 19
	32	b.m.	8 10 7 24 7 24 7 24 3	66 66 66 66 66 66 66 66 66 66 66 66 66	44555 8175 855 855 855 855 855 855 855 855 855 8	004444 124083	22529 184188	6 55 7 1 14 7 1 32 7 1 59 8 8
	2	b. m	877777 84877 000000000000000000000000000	6 22 4 6 23 0 23 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	444666 882 555 34	244444 2048348	21 22 25 25 25 25 25 25 25 25 25 25 25 25	6 50 7 24 7 36 7 49 7 57
	\$	р. ш	74-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-	66 21 30 0 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	44446 2721 2000 3000 3000	413842	81 82 93 94 95 95 95 95 95 95 95 95 95 95 95 95 95	6 45 7 17 7 29 7 41 7 48
j	40	р. П.	######################################	000000 980484	444444 \$885188	444444 21022420 6	6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 41 7 22 7 22 7 33 7 40
p. 114.)	4	<u>н</u>	7 1 28 33 6 7 1 1 8 8 2 1 1 8 8 3 1 1 8 8 3 1 1 8 8 3 1 1 8 8 1 1 1 1 8 1	0000000 8000044 0044	444444 282255	44444 67284 100	844858	6 37 7 7 7 8 50 7 7 15 33 55 55 55 55 55 55 55 55 55 55 55 55 5
Temp. Tables, p. 114.)	*	n. E	7 27 7 27 7 23 7 13 6 49	6 6 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8	******** ********	444400 2435000	28488 28848	6 33 6 45 6 45 7 18 7 18
emp. T	<b>.</b>	H H	7 22 7 21 7 18 7 18 6 58 6 58	6 34 6 17 5 24 5 29 14 29	244444 088888	444477 464477 777	5 27 5 37 5 46 5 57 6 18	6 29 6 41 7 12 7 19
	 	p. m	7 16 7 17 7 12 6 55 6 55	6 17 6 17 6 17 6 17 7 45 17	244444 254888	44420 88482 800 800 800 800 800 800 800 800 800 8	6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 26 6 37 6 47 6 47 7 7 7 13
m Sch	80 80	n d	7 10 7 10 7 7 7 6 52 6 41		754444 754444	4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6 13 as	6 24 6 33 7 1 7 8
ited fro	25	<u>п</u>	6667355 8887355		2 4 4 4 4 4 5 11 1 2 5 5 4 5 4 5 4 5 5 1 1 1 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5	44 51 52 52 52 52 52 53 54 54 54 54 54 54 54 54 54 54 54 54 54	6 6 5 5 4 5 6 5 5 5 5 5 5 5 5 5 5 5 5 5	6 21 6 29 7 4 7 8 56 7 3
(Computed from Schott.	2	<u>а</u>			7 2 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5	40000 20000 2014 20000	იიიიი 414421.დ	0 0 0 0 0 17 52 52 52 52 52 52 52 52 52 52 52 52 52
	.0g	р. п		000000 2400000	7777444 7077444		244400	0 0 0 0 0 0 4 2 2 2 2 2 2 2 2 2 2 2 2 2
	**************************************	H	6 52 6 52 6 54 6 44 6 44 6 44	22020 232023 232023	0.0000000 0.00000000	2222617	20000000 800000000000000000000000000000	0 0 0 0 0 11 1 1 1 1 1 1 1 1 1 1 1 1 1
	** **	h.	64 64 65 65 65 65 65 65 65 65 65 65 65 65 65	6 13 24 25 25 25 25 25 25 25 25 25 25 25 25 25	50 50 77 77 77 77		24327c	00000ee
	2	D. H	2444 4444 4444 4444	25 25 25 25 25 25 25 25 25 25 25 25 25 2	202222	2288812	2444222 2444222	6 6 6 6 13 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	* *	h. m	844882	21,248	9922828	232223 232223 232223	**************************************	6 6 6 6 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	\$	n. n			2022	**************************************		6 12 6 18 6 24 6 31
				22	22	118118		112112
			YYY E	Mar. Mar. Apr. Apr. Apr.	May May May June Lune	Luly Luly Auge		NESS ODOS OSOS OSOS OSOS OSOS OSOS OSOS O

TABLE XXXIX.-TIME OF SUNRISE.

#### TABLE XL.

#### TO DETERMINE THE POSITION OF A POINT ON A MAP.

#### INTRODUCTION.

This table is designed to facilitate the determination to minutes of arc, of positions on a map with lines of latitude and longitude, having given the shortest distances on the map from the point to the nearest parallel and meridian. For use, first measure on any convenient scale the distance between any two lines of latitude or longitude. If no figure at the top of the table coincides with this distance, it may be multiplied or divided by any number to bring it within the range of the table. Then measure the distance on the same scale from the point to the line of latitude or longitude and find the same number multiplied or divided as above, if necessary in the left-hand column. The intersection of lines from these two numbers will give the minutes of latitude or longitude on the map.

#### EXAMPLE.

Let distance between two meridians be 46 mm, and that from a point to the nearest meridian 20 mm; the minutes of longitude are 26.

#### XXXVII-XLV. MISCELLANEOUS TABLES.

TABLE XL.—TO DETERMINE THE POSITION OF A POINT ON A MAP. (Original.)

Horizontal argument is the distance between two parallels or meridians on any scale. Vertical argument is the distance from the point to the nearest parallel or meridian.

	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
1 2 3 4 5	2 5 7 9 12	2 4 6 9 11	2 4 6 8 10	2 4 6 8 10	2 4 5 7 9	23578	23568	1 3 4 6 7	1 3 4 6 7	1 3 4 5 7	1 2 4 5 7	1 2 4 5 6	1 2 4 5 6	1 2 4 5 6	1 2 3 4 6	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	2345	1 2 3 4 4	1 2 3 3 4
6 7 8 9 10	14 16 19 21 23	13 15 17 19 22	12 14 16 18 20	11 13 15 17 19	11 12 14 16 18	10 12 13 15 17	9 11 12 14 16	9 10 12 13 15	9 10 11 13 14	8 10 11 12 14	8 9 10 12 13	.7 9 10 11 13	7 8 10 11 12	7 8 9 10 12	7 8 9 10 11	6 7 9 10 11	6 7 8 9 10	6 7 8 9 10	6 7 8 9 10	6 7 8 8 9	5 6 7 8 9	5 6 7 8 9	56789
11 12 13 14 15	26 28 30	24 26 28 30	22 24 26 28 30	21 23 25 26 28	19 21 23 25 26	18 20 22 23 25	17 19 21 22 24	16 18 20 21 22	16 17 19 20 21	15 16 18 19 20	14 16 17 18 20	14 15 16 17 19	13 14 16 17 18	13 14 15 16 17	12 13 14 16 17	12 13 14 15 16	11 12 13 14 16	11 12 13 14 15	11 12 13 14 15	10 11 12 13 14	10 11 12 13 14	10 11 11 12 13	9 10 11 12 13
16 17 18 19 20				30	28 30	27 28 30	25 27 28 30	24 25 27 28 30	23 24 26 27 29	22 23 25 26 27	21 22 23 25 26	20 21 22 24 25	19 20 22 23 24	18 19 21 22 23	18 19 20 21 22	17 18 19 20 21	17 18 19 20 21	16 17 18 19 20	15 16 17 18 19	15 16 17 18 19	15 15 16 17 18	14 15 16 17 18	14 15 15 16 17
21 22 23 24 25									30	29 30	27 29 30	26 27 29 30	25 26 28 29 30	24 25 27 28 29	23 24 26 27 28	22 24 25 26 27	22 23 24 25 26	21 22 23 24 25	20 21 22 23 24	20 21 22 22 22 23	19 20 21 22 23	19 19 20 21 22	18 18 20 21 21
6 7 8 9														30	29 30	28 29 30	27 28 29 30	26 27 28 29 30	25 26 27 28 29	24 25 26 27 28	24 25 25 26 27	23 24 25 26 26	25 25 24 25 26
12845																			30	29 30	28 29 30	27 28 29 30	20 20 20 20 30

#### TABLES XLI-XLIII.

#### DIVISION TABLES.

#### Introduction.

These tables are designed to facilitate division by 28, 29 and 31: divisors of frequent use in meteorological reductions.

The horizontal rows of figures lettered "D" in plain and bold-faced type are respectively the first three and last two figures of the dividend. The corresponding numbers in the horizontal rows lettered "Q" are respectively the hundreds, tens and units figures of the quotient.

#### EXAMPLE. TABLE XLII.

To divide 22883 by 28:

Under 228 in the horizontal rows (D) we find 8, and under 76, the number nearest to 83, in bold-faced type, we find 17.

Hence the quotient is 817 %.

TABLE XLI.-DIVIDING BY 89.

							(Or	iginal.	.)							
D. Q. D. Q.	0 0 1 0 2 0 3 0	29 100 30 1 31 1 32 1	58 200 59 2 60 2 61 2	87 300 88 3 89 3 90 3	116 400 117 4 118 4 119 4	145 500 146 5 147 5 148 5	174 600 175 6 176 6 177 6	203 700 204 7 205 7 206 7	232 800 233 8 234 8 235 8	261 900 262 9 263 9 264 9	D. Q.D. Q.D. Q.D. Q.	00 00 16 04 03 07 19	29 01 45 05 32 08 48 12	58 02 74 06 61 09 77	87 03 90 10	16 04 03 07 19 11 06 14
D. Q. D. Q. D. Q. D.	4 0 5 0 6 0 7 0	33 1 34 1 35 1 36 1	62 2 63 2 64 2 65 2	91 3 92 3 93 3 94 3	120 4 121 4 122 4 123 4	149 5 150 5 151 5 152 5	178 6 179 6 180 6 181 6	207 7 208 7 209 7 210 7	236 8 237 8 238 8 239 8	265 9 266 9 267 9 268 9	ದಿಭವಿಭವಿಭವಿಭ	06 14 22 18 09 21 25 25	35 15 51 19 38 22 54 26	64 16 80 20 67 23 83 27	93 17 96 24	22 18 09 21 25 25 12 28
D. Q. D. Q. D. Q. D. Q. D. Q.	8 0 9 0 10 0 11 0	37 1 38 1 39 1 40	66 2 67 2 68 2 69 2	95 3 96 3 97 3 98 3	124 4 125 4 126 4 127 4	153 5 154 5 155 5 156 5	182 6 183 6 184 6 185 6	211 7 212 7 213 7 214 7	240 8 241 8 242 8 243 8	269 9 270 9 271 9 272	<u> </u>	12 28 28 32 15 35 02 38	41 29 57 33 44 36 31 39	70 30 86 34 78 37 60 40	99 31 89 41	28 32 15 35 02 38 18 42
D Q D Q D Q D Q	12 0 13 0 14 0 15 0	41 1 42 1 43 1 44 1	70 2 71 2 72 2 73 2	99 3 100 3 101 3 102 3	128 4 129 4 130 4 131 4	157 5 158 5 159 5 160 5	186 6 187 6 188 6 189 6	215 7 216 7 217 7 218 7	244 8 245 8 246 8 247 8	273 9 274 9 275 9 276 9	ದೆ ಭವ ಭವ ಭವ ಭ	18 42 05 45 21 49 08 52	47 43 84 46 50 50 87 53	76 44 63 47 79 51 66 54	92 48 95 55	05 45 21 49 08 52 24 56
ひばめいのいめば	16 0 17 0 18 0 19 0	45 1 46 1 47 1 48 1	74 2 75 2 76 2 77 2	103 3 104 3 105 3 106 3	132 4 133 4 134 4 135 4	161 5 162 5 163 5 164 5	190 6 191 6 192 6 193 6	219 7 220 7 221 7 222 7	248 8 249 8 250 8 251 8	277 9 278 9 279 9. 280 9	ದೆ. ಭದ್ರಭವರ್ಧರು	24 56 11 59 27 63 14 66	53 57 40 60 56 64 43 67	82 58 69 61 85 65 72 68	·98 62	11 59 27 63 14 66 01 69
ログコのコのコウ	20 0 21 0 22 0 23 0	49 1 50 1 51 1 52 1	78 2 79 2 80 2 81 2	107 3 108 3 109 3 110 3	136 4 137 4 138 4 139 4	165 5 166 5 167 5 168 5	194 6 195 6 196 6 197 6	223 7 224 7 225 7 226 7	252 8 253 8 254 8 255 8	281 9 282 9 283 9 2-4 9	n ಡಲ್ಲಡ್ಲಿ ಡಲ್ಲಿ ಡ	01 69 17 73 04 76 20 80	30 70 46 74 33 77 49 81	59 71 75 75 62 78 78 82	88 72 91 79	17 73 04 76 20 80 07 83
D Q D Q D Q D Q	24 0 25 0 26 0 27 0	53 1 54 1 55 1 56 1	82 83 2 84 2 85 2	111 3 112 3 113 3 114 3	140 4 141 4 142 4 143 4	169 5 170 5 171 5 172 5	198 6 199 6 200 6 201 6	227 7 228 7 229 7 230 7	256 8 257 8 258 8 259 8	285 9 286 9 287 9 288 9	ലയ്ച്യലയ്ച്യ	07 83 28 87 10 90 26 94	<b>36</b> 84 <b>52</b> 88 <b>39</b> 91 <b>55</b>	65 85 81 89 68 92 84 96	94 86 97 93	28 87 10 90 26 94 13 97
D. Q.	28 0	57 1	286	115 3	144 4	173 5	202 6	231 7	260 8	ackslash 9	$\left  \begin{array}{c} \mathcal{G} \\ \mathrm{D} \end{array} \right $	13 97	42 98	71		

TABLE XLII.-DIVIDING BY 28.

(Original.)

·								1				1				$\Box$
n c n c n c n c n c n c n c n c n c n c	0 0 1 0 2 0 3 0	28 100 29 1 30 1 31	56 200 57 2 58 2 59 2	84 300 85 3 86 3 87 3	112 400 113 4 114 4 115 4	140 500 141 5 142 5 143 5	168 600 169 6 170 6 171 6	196 700 197 7 198 7 199 7	224 800 225 8 226 8 227 8	252 900 253 9 254 9 255 9	A GA GA GA G	00 00 12 04 24 08 08 11	28 01 40 05 52 09 86 12	56 02 68 06 80 10 64 13	84 03 96 07 92 14	12 04 24 .08 08 11 20
n gin gin gin gi	4 0 5 0 6 0 7 0	32 1 33 1 34 1 35 1	60 2 61 2 62 2 63 2	88 3 89 3 90 3 91 3	116 4 117 4 118 4 119 4	144 5 145 5 146 5 147 5	172 6 173 6 174 6 175 6	200 7 201 7 202 7 203 7	228 8 229 8 230 8 231 8	256 9 257 9 258 9 259 9	D Q D Q D Q D Q	20 15 04 18 16 22 00 25	48 16 82 19 44 23 28 26	76 17 60 20 72 24 56 27	88 21 84 28	04 18 16 22 00 25 12 29
n ợn ởn ởn ở	. 8 0 9 0 10 0 11	36 1 37 1 38 1 39 1	64 2 65 2 66 2 67 2	92 3 93 3 94 3 95 3	120 4 121 4 122 4 123 4	148 5 149 5 150 5 151	176 6 177 6 178 6 179 6	204 7 205 7 206 7 207 7	232 8 233 8 234 8 235 8	260 9 261 9 262 9 263 9	ဂ်တဲ့ဂ်တဲ့ဂ်တဲ့ဂ်တဲ့	12 29 24 33 •08 36 20 40	40 30 52 34 86 37 48 41	68 31 80 35 64 38 76 42	96 32 92 39	24 33 08 36 20 40 04 43
n ởn ởn ởn ở	12 0 13 0 14 0 15 0	40 1 41 1 42 1 43 1	68 2 69 2 70 2 71 2	96 3 97 3 98 3 99 3	124 4 125 4 126 4 127 4	152 5 153 5 154 5 155 5	180 6 181 6 182 6 183 6	208 7 209 7 210 7 211 7	236 8 237 8 238 8 239 8	264 9 265 9 266 9 267 9	ĐƠ ĐƠ ĐƠ ĐƠ CÓ	04 43 16 47 00 50 12 54	82 44 44 48 28 51 40 55	60 45 72 49 56 52 68 56	88 46 84 53 96 57	16 47 00 50 12 54 24 58
n Q n Q n Q n Q	16 0 17 0 18 0 19 0	44 1 45 1 46 1 47	72 2 73 2 74 2 75 2	100 3 101 3 102 3 103 3	128 4 129 4 130 4 131 4	156 5 157 5 158 5 159 5	184 6 185 6 186 6 187 6	212 7 213 7 214 7 215 7	240 8 241 8 242 8 243 8	268 9 269 9 270 9 271 9	E Q E Q E Q E Q E	24 58 08 61 20 65 04 68	52 59 86 62 48 66 82 69	80 60 64 63 76 67 60 70	92 64 88 71	08 61 20 65 04 68 16 72
ာ့ တရဲ့တဲ့ရဲ့တဲ့ရဲ့တဲ့	20 0 21 0 22 0 23 0	48 1 49 1 50 1 51	76 2 77 2 78 2 79 2	104 3 105 3 106 3 107 3	132 4 133 4 134 4 135 4	160 5 161 5 162 5 163 5	188 6 189 6 190 6 191 6	216 7 217 7 218 7 219 7	244 8 245 8 246 8 247 8	272 9 273 9 274 9 275 9	D. Q.D. Q.D. Q.D. Q.D. Q.D. Q.D. Q.D. Q	16 72 00 75 12 79 24 83	44 73 28 76 40 80 52 84	72 74 56 77 68 81 80 85	84 78 96 82	00 75 12 79 24 83 08 86
nghghgh.	24 0 25 0 26 0 27 0	52 1 53 1 54 1 55 1	80 2 81 2 82 2 83 2	108 3 109 3 110 3. 111 3	136 4 137 4 138 4 139 4	164 5 165 5 166 5 167 5	192 6 193 6 194 6 195 6	220 7 221 7 222 7 223 7	248 8 249 8 250 8 251 8	276 9 277 9 278 9 279 9	D. Q.D. Q.D. Q.D. Q.D. Q.D. Q.D. Q.D. Q	08 86 20 90 04 93 16 97	36 87 48 91 32 94 44 98	64 88 76 92 60 95 72 99	92 89 88 96	20 90 04 93 16 97 00 100
<u> </u>								110		<u>'</u>	<u>'</u>		<u>'</u>	<u></u>	<u></u>	

#### XXXVII-XLV. MISCELLANEOUS TABLES.

XLIII.-DIVIDING BY 81.

	<del></del>	
D. 0 31 62 93 124 155 186 217 248 279 D. 00 31 6. 00 00 01 00 00 00 00 00 00 00 00 00 00	62   93   02   03	24 04
Q   0   100   200   300   400   500   600   700   800   900   Q   00   01   0   0   0   0   0   0   0	86	17
Q.   0   1   2   3   4   5   6   7   8   9   Q.   04   05	06	07
$ \  \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	<b>79</b> 09	10 10
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	72	03
0 0 1 2 3 4 5 6 7 8 9 Q. 10 11	12	13
D. 4 35 66 97 128 159 190 221 252 283 D. 03 34	65 96	27
$ \begin{vmatrix} \mathbf{Q} & 0 & 1 \\ \mathbf{D} & 5 & 36 \end{vmatrix} \begin{vmatrix} 67 & 98 & 129 \\ 67 & 98 & 129 \end{vmatrix} \begin{vmatrix} 5 & 6 & 7 & 8 & 9 \\ 160 & 191 & 222 & 253 & 284 & \mathbf{D} \end{vmatrix} \mathbf{C} $	15   16	$\begin{array}{c c} 17 \\ \textbf{20} \end{array}$
D. 5   36   67   98   129   160   191   222   253   284   D.   27   58	89 19	20
D.   6   37   68   99   130   161   192   223   254   285   D.   <b>20   51</b>	82	18
	22 75	23 <b>06</b>
D.   7   38   69   100   131   162   193   224   255   286   D.   13   44	25	26
D. 8 39 70 101 132 163 194 225 256 287 D. 06 37	68 99	30
	28   29	30
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	<b>92</b>   32	<b>28</b>   33
D.   10   41   72   103   134   165   196   227   258   289   D.   23   54	85	16
	35	36
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	78 38	<b>09</b> 39
D. 12 43 74 105 136 167 198 229 260 291 D. <b>09 40</b>	71	02
$\begin{bmatrix} D & 12 & 43 & 74 & 103 & 130 & 107 & 138 & 223 & 200 & 281 & D. & 40 \\ Q & 0 & 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & Q. & 39 & 40 \end{bmatrix}$	41	42
D.   13   44   75   106   137   168   199   230   261   292   D.   <b>02   33</b>	64   95	26
Q.   0   1   2   3   4   5   6   7   8   9   Q.   42   43   169   200   231   262   293   D.   26   57	44   45   88	46 <b>19</b>
	48	49
D.   15   46   77   108   139   170   201   232   263   294   D.   19   50	81	12
Q 0 1 2 3 4 5 6 7 8 9 Q 49 50	51	52
D.   16   47   78   109   140   171   202   233   264   295   D.   12   48   4   5   6   7   8   9   Q.   52   53	74 54	<b>05</b> 55
D.   17   48   79   110   141   172   203   234   265   296   D.   05   36	67 98	29
Q.   0   1   2   3   4   5   6   7   8   9   Q.   55   56   1   D.   18   49   80   111   142   173   204   235   266   297   D.   29   60	57   58   <b>91</b>	59 <b>22</b>
D.   18   49   80   111   142   173   204   235   266   297   D.   29   60   Q.   0   1   2   3   4   5   6   7   8   9   Q.   59   60	61	62
D.   19   50   81   112   143   174   205   236   267   298   D.   <b>22   53</b>	84	15
Q.   0   1   2.   3   4   5   6   7   8   9   Q.   62   63	64	65
D. 20   51   82   113   144   175   206   237   268   299   D.   15   46   46   65   66	77 67	08 68
D. 21 52 83 114 145 176 207 238 269 300 D. 08 39	70	01
Q.   0   1   2   3   4   5   6   7   8   9   Q.   68   69	70	71
D.     22     53     84     115     146     177     208     239     270     301     D.     01     32       Q.     0     1     2     3     4     5     6     7     8     9     Q.     71     72	<b>63   94  </b> 73   74	<b>25</b>   75
<b>D.</b>   23   54   85   116   147   178   209   240   271   302   <b>D.</b>   <b>25</b>   <b>56</b>	87	18
Q.   0   1   2   3   4   5   6   7   8   9   Q.   75   76	77	78
D. 24 55 86 117 148 179 210 241 272 303 D. 18 49	80	11
\[ \begin{array}{c c c c c c c c c c c c c c c c c c c	80 73	81 <b>04</b>
Q.   0   1   2   3   4   5   6   7   8   9   Q.   81   82	83	84
\ \ \D. \ \ 26 \ \ 57 \ \ 88 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	66   97 86   87	<b>28</b>   88
Q.     0     1     2     3     4     5     6     7     8     9     Q.     84     85       D.     27     58     89     120     151     182     213     244     275     306     D.     28     59	90 87	21
Q.   0   1   2   3   4   5   6   7   8   9   Q.   88   89	90	91
	88	14
Q.     0     1     2     3     4     5     6     7     8     9     Q.     91     92       D.     29     60     91     122     153     184     215     246     277     308     D.     14     45	93 <b>76</b>	94 07
$ Q_1   Q_2   Q_3   Q_4   Q_5$	186	81
$\left( egin{array}{c c c c c c c c c c c c c c c c c c c $	8 89	1
$egin{array}{ c c c c c c c c c c c c c c c c c c c$	3/33/	$\underline{\hspace{1cm}}$

TABLE XLIV.—MONTHLY NORMAL PRESSURE (15 YEARS) AND TEMPERATURE (8 YEARS).

		ď		Jai	ıuaı	ry.	1	eb.		Ma	ret	١.	Aj	ril		M	lay.		J	une.
Station.	Latitude.	Longitude.	Height.		Fressure	Temp.		rressure.	Temp.	Procento	amogari	Temp.	Procento		Temp.	December	rressure.	Temp	Proteiling	Tomp
				Ob	Re	7	Ob	Re.		Ob.	Re.		Ob.	Re		Ob.	Re.		Ob.	Re.
AbileneAlbanyAlpenaApacheApache	42 39 45 5 33 48	73 45 83 30 109 57	85 609 5050	0.01 $9.35$ $5.03$	0.10 $0.06$ $0.16$	24 16 34	.36	.08 .07	26 17 39	.21 .90 .32 .04 .13	.05 .99 .02 .08 .05	56 32 22 45 30	.14 .87 .32 .98 .12	.96 .96 .00 .98 .97	47 36	.13 .89 .31 .99 .12	.92 .98 .97 .92	61 50 58	.15 .87 .29 .02	.92 8 .95 6 .94 5 .87 6
AtlantaAtlantic City Augusta Baltimore Benton	39 22 33 28 39 18	74 25 81 54 76 35	34 183 45	0.10	$0.13 \\ 0.20 \\ 0.16$	32 46 34	.07 .97	.10 .17	34 52 37	.89 .97 .89 .98	.10 .00 .09 .03 .07	52 37 55 41 31	.85 .94 .84 .95 .19	.04 .97 .03 .00 .02	47 64 53	.87 .98 .84 .97	.05 .01 .03 .02 .94	65	.89 .96 .85 .95	.05 1 .99 6 .04 7 .00 7 .89 6
Bismarck Block Island Boise City Boston Brownsville	41 10 43 37 42 21	71 36 116 1	26 8 2750 4 125	0.06 7.25 9.93	0.09	32 29 26	.22	.07 .19	32 33 29	.21 .93 .18 .81 .97	.10 .96 .09 .95	33	.15 .92 .13 .80 .89	.97 .95 .01 .93	49	.97 .12 .85	.00 .95 .98	58 56	.12 .96 .11 .83 .89	.86 ( .99 ( .90 ( .96 ( .95 (
Buffalo Buford Cairo Cedar Keys Charleston	137 0	89 1	0 344	9.78	0.09 0.17 0.17 0.18 0.18	34	.98 .74	.17 .12 .15	8 40	.23 .96 .67 .08 .02	.00 .08 .04 .10	24 47	.22 .92 .60 .03	.98 .97 .97 .05	41 59 69	,00	.89 .96 .02	68 75	.23 .87 .61 .02 .99	.96 .84 .97 .04
Charlotte Chattanooga Cheyenne Chicago Cincinnati	35 4 41 5 41 52	85 1 104 4 87 3	5 772 8 6108 8 718	9.30	0.18 0.19 0.19 0.11 0.11	25	.32 .89	.15 .17	46 26 28	.18 .25 .92 .25 .36	.05 .08 .08 .04	34 34	.93		60 40 46	.21 .97 .21	.02 .92 .97	68 50 57	.19 .23 .04 .20 .33	.03 .04 .86 .95
Cleveland Columbus Corpus Christi Custer Dayenport	39 58 27 49 45 42	83 97 2 107 3	0 819 5 20 4 3040	9.24	0.15 0.15 0.16 0.16 0.16	5 28	.09	.12 .11	33 58 19	.26 .15 .03 .80 .37	.04 .04 .05 .06	38 64 33	.12 .96 .78	.99 .98 .97		.14 .95	.99 .97 .91	63 76 55	.25 .14 .96 .77 .30	.98 .98 .98 .85
Davis Deadwood Denver Des Moines Detroit	139.43	105	0.5281	9.19	0.19 0.18 0.18 0.18 0.18	29	.66	.17	22 31 24	.17 .30 .66 .11 .28	.06	31 39 35	.30 .66	.00 .01 .98 .96	39 47 50	.33 .70	.93 .92 .94	56 62	.21 .37 .74 .03 .26	.94 .88 .84 .92 .96
Dodge City Dubuque Duluth Eastport Elliott	37 42 42 30 46 48 44 54 35 30	100 90 4 92 66 5 100 2	0 2526 4 666 6 675 9 53 1 2650	7.43 5 9.3 2 9.3 3 9.9 7.2	0.18 0.18 2 0.11 4 0.00 8 0.18	26 31 32 33	.40 .35 .32 .90 .25	.10	23 13	.29	.05 .04 .05 .88 .05	32 23 27	.25 .26 .83	.94 .97 .00 .89	48 37 38	.25	.96 .96	60 49 47	.34 .24 .20 .87 .20	.88 .94 .92 .93 .90
El Paso Erie Escanaba Fort Smith Galveston	31 47 42 7 45 48	106 3 80 87	0 3796 5 683 5 608 4 476	6.28 1 9.33 9.33 9.63		7 44 0 20 5 1: 8 3:	.26 .32 .36	.08 .06 .12	28 14	.25 .33 .53	.02	31	.24 .31 .45	.97 .98 .98 .95	36	.20	.98 .96 .94	58 50 69	.25 .27 .47	.92
Grand Haven. Grant Hatteras Helena Huron	32 39	109 5	7 4860	5.2	0.16	6 43	.25	2 .14	45 48 21	.20 .03 .80	.07	51 49 34	.17 .99 .80	.00	57 57 42	.18	.93	66 67 52	.21	.89
Indianapolis Jacksonville Keokuk Key West Knoxville	30 20 40 21 24 3	81 3 91 2 4 81 4	9 43 6 61 9 2	3 0.1 8 9.4 2 0.1	0.16 0.18 0.18 0.18 0.18 0.18	8 50 5 20 4 70	.11 2 .42 0 .10	1 .12 2 .11 0 .12	60 28 72	.05	.09	62 38 73	.00 .29	,04	69 59 76	.95	.02 .95 .01	75 64 80	.00	.94
La Crosse Las Animas Leavenworth Idtle Rock Os Angeles	38 39 19 34 4	4 103 1 9 94 5 5 92	2 389 7 84 6 30	96.0 $29.2$ $99.8$	8 0.13 3 0.2 5 0.2 5 0.2 2 0.0	1 2 0 2 0 4	2 .00	0 .14	29 30 4 46	.99	.07	40 41 58	.95 .07 .66	.94	5 5	99 .99	91 91 94 95 98	65	.01 .07	.94

## MONTHLY NORMAL PRESSURE (15 YEARS) AND TEMPERATURE (8 YEARS).

	J	uly		Au	gus	st.	8	ept		Oct	obe	r.	N	ov.		1	ec.		Y	ear.
Station.	December	rressure.	Temp.		rressure.	Temp.		ressure.	Temp.	Decopused	Ticssure.	Temp.	Decorporate	Tressure.	Temp.	Dunganing	Liessille.	Temp.	Decorting	Tressme.
	Ob.	Re.		Ob	Re.		Ob.	Re.		Ob.	Re.	1	Ob.	Re.		Ob.	Re.		Ob.	_
AbileneAlbanyAlpenaApacheAssinaboine	9.85 $9.30$	9.93 $9.95$	73 65	.91 .34 .08	.97 .99 .99 .92 .91	71 63 70	.07	.01 .07 .01 .97	74 64 57 63 54	.26 .98 .36 .06	.08 .07 .03 .03		.28 .98 .33 .06 .17	.14 .07 .02 .13 .09	40 33 41	.29 .99 .33 .05 .17	.18 .08 .03 .15	29 24 37	.22 .93 .33 .04 .15	.04 6 .02 4 .01 4 .02 5
AtlantaAtlantic City AugustaBaltimoreBenton	9.95 9.85 9.94	$9.98 \\ 0.04 \\ 0.98$	81 77	.98 .84 .98	.04 .01 .03 .03	72 79 74	.05 .89	.10 .08 .08 .10	68 75	.95 .06 .93 .06 .18	.14 .09 .12 .11	58	.95 .06 .96 .07	.17 .10 .16 .12 .18	$\frac{54}{46}$	.97 .08 .99 .09	.20 .11 .19 .14		.92 .02 .91 .02 .17	.11 6 .05 5 .10 6 .07 5 .00 4
BismarekBlock Island Boise CityBostonBrownsville	9.94 $7.13$ $9.82$	9.97 $9.89$ $9.91$	73 71	.98	.01 .89 .99	68 71 68	.17	.99	56 64 60 62 79	.18 .08 .23 .93 .98	.00 .11 .11 .06 .04	43 55 48 52 74	.21 .03 .29 .90	.08 .06 .22 .03 .10	38 41	.22 .03 .27 .91 .06	.14 .06 .24 .05 .12	36 33 31	.18 .00 .18 .87 .96	.01 3 .03 5 .05 5 .00 4 .02 7
Buffalo Buford Cairo Cedar Keys Charleston	9.64	9.99	79 82	.64	.99	66 78 82	.95 .69	.05 .95 .05 .02 .06	54 71 79	.30 .96 .72 .03 .05	.05 .01 .09 .05	51 42 60 73 68	.28 .97 .74 .09 .08	.04 .08 .11 .11	47 63	.28 .00 .77 .14 .11	.06 .17 .15 .16	12 38 57	.27 .94 .69 .06	.02 4 .00 3 .06 5 .08 7 .09 6
Charlotte Chattanooga Cheyenne Chicago Cincinnati	14.12	9.89	66	.12	.03	76 64 71	.28 .09 .28	.09 .09 .97 .04	71 71 56 65 69	.26 .31 .04 .28 .43	.11 .13 .07 .05	44 53	.27 .33 .99 .28 .43	.14 .16 .15 .06 .12	49 34 39	.28 .35 .93 .29 .45	.17 .19 .17 .08	41 29 29	.23 .28 .00 .26 .39	.08 6 .10 6 .03 4 .03 4
Cleveland Columbus Corpus Christi Custer Dayenport	[0.00]	0.02	83	.98	.00	72 82 70	.22 .99 .85	.07 .06 .01 .97	79 57	.33 .23 .05 .86 .40	.08 .09 .07 .04	55 73 46		.08 .11 .12 .12 .09	41 62 32	.32 .23 .12 .84 .44	.09 .14 .14 .16 .13	32 56 22	.29 .19 .03 .82 .37	.02 4 .06 5 .05 7 .01 4
Davis	9.08	9.87	72	.82 .09	.91 .89	64 70 72	.43 .81 .11	.04 .99 .96 .01	62 64	.27 .39 .78 .14	.12 .04 .06 .06	50 52	.25 .35 .75 .15	.18 .14 .18 .10	32 37 36	.23 .30 .70 .18 .34	.20 .18 .18 .15	24 33 24	.22 .35 .73 .11 .31	.07 6 .02 4 .01 5 .03 4
Dodge City Dubuque Duluth Eastport Elliott	194, 221	190, 922	1 696	.24	.96	71 64 61	.32 .25 .97	.99 .03 .98 .03	63 55 56	.43 .33 .26 .95 .29	.05 .05 .00 .01	45	.44 .34 .28 .91 .29	.13 .08 .03 .97	35 29 37	.44 .36 .30 .91 .28	.18 .11 .08 .97	24 16 26	.39 .31 .26 .90 .25	.02 5 .03 4 .00 3 .96 4 .03 5
El Paso Erie Escanaba Fort Smith Galveston	9.26 9.29 9.50	9.97 9.93 9.98	71 66 80	.32	.97	69 63 79	.34 .34 .53	.97 .06 .95 .02	57 73	.27 .33 .34 .58 .03	.05 .06 .01 .08 .07	62 53 45 62 73	.30 .31 .33 .61	.15 .05 .01 .12 .12	40	.30 .31 .34 .63 .10		31 21 40	.25 .29 .32 .54 .01	.03 6 .02 4 .99 4 .04 6
Grand Haven Grant Hatteras Helena Huron	5.26 $0.02$ $5.88$	$9.92 \\ 0.03 \\ 9.91$	77 78 67	.25	.94	74 77 67	.25 .06 .87	.03 .97 .07 .99	62 70 75 55 58	.36 .24 .08 .86 .61	.03 .02 .09 .06	62 66	.35 .26 .10 .86 .65		51 56	.36 .25 .12 .83 .68	.05 .17 .14 .17	45 47 23	.34 .23 .06 .83 .61	.01 4 .03 6 .07 6 .03 4 .04 4
Indianapolis Jacksonville Keokuk Key West Knoxville	0.01 9.33 0.04	0.05 $9.97$ $0.06$	82 77 85	.98	.99	81 74 84	.99 .38 .97	.07 .03 .03 .99	67 83	.27 .03 .40 .97	.10 .07 .07 .99 .14	55 71 54 79 60	.27 .08 .41 .04	.11 .12 .09 .06 .18	40 74	.28 .12 .44 .10 .13	.14 .16 .13 .12 .20	56 31 70	.23 .04 .36 .03 .07	.06 5 .08 6 .03 5 .05 7 .10 5
La Crosse	9.11	9.97	77	.08 .12 .68	.98 .92 .99 .00	73 75 79	.15	.01 .96 .02 .06	68	.22 .06 .18 .77 .62	.02 .04 .07 .10		.24 .06 .20 .80	.06 .16 .12 .14	41 51	.26 .04 .24 .82	.10 .18 .18 .17	29 30 43	.21 03 .15 .74	.01 4 .02 5 .04 .07

121

16

## MONTHLY NORMAL PRESSURE (15 YEARS) AND TEMPERATURE (8 YEARS).

				Jai	nua	ry.	1	eb.		M	arel	h.	A	pril		3	lay		J	une.	
Station.	Latitude.	Longitude.	Height.		l'ressure.	Temp.		Liessaire.	Temp		riessure.	Temp.	December	Tressare.	Temp.	Decremen	Tressare.	Temp.		rressure.	Temp
				Ob.	Re.		Ob.	Re.		Ob.	Re.		Ob.	Re	1	Ob.	Re.		Ob	Re	
Louisville Lynchburg Maginnis Marquette Memphis	37 25 47 12	79 9	658 4370 672	$9.45 \\ 5.41 \\ 9.28$	0.18 0.17 0.14 0.05 0.19	36 18 14	.46	.14 .16	41 21 15	.46 .33 .49 .28 .72	.07 .05 .09 .04	44 45 31 22 51	51	.00 .00 .03 .00	56 39 37	.41 .33 .53 .25 .65	.99 .01 .96 .98	67 67 49 50 71	.41 .34 .55 .22 .66	.99 7 .02 7 .90 5 .94 5	14 88 88
Milwaukee Mobile Montgomery Moorhead Mt. Wash	43 2 30 41 32 23 46 52 44 16	87 54 88 2 86 18 96 44 71 18	35 217 926	0.15 9.96 9.07	0.10 0.19 0.20 0.17 0.07	50 48 -1	.12 .92 .06	.09 .15 .16 .15	56 53 5	.25 .06 .85 .04 .39	.03 .09 .09 .10	60 57 19	.00 .80 .96	.99 .03 .04 .98	67 65 39	.22 .98 .79 .93 .74	.98 .01 .02 .93	55	.21 .99 .80 .90 .82	.96 6 .02 8 .03 7 .87 6 .93 4	9 5
Nashville New Haven New London New Orleans New York	41 18	72 56	107 47 52	$0.05 \\ 0.11$	0.17 0.12 0.10 0.16 0.12	26 29 54	.03	.14 .09 .08 .12 .12	29 30 59	.47 .86 .93 .02 .80	.06 .99 .98 .07	33 35 62	.92	.98 .97 .97 .01	46 46 69	.96	.99 .00 .01 .99	57 56 75	.42 .87 .94 .95 .80	.99 6 .99 6 .99 6 .00 8	6 5 1
Norfolk Northfield North Platte Olympia Omaha	36 51 44 10 41 8 47 3 41 16	76 17 72 41 100 45 122 53 95 56	69 871 2841 36 1113	9.07 7.08 9.99	0.16 0.07 0.22 0.03 0.22	18 19 38	.06	.14 .06 .17 .03	24 •38	.01 .00 .05 .97	.04 .98 .10 .01	44	.00 .01	.00 .96 .98 .03	38 48 48	.99 .03 .01 .01	.02 .97 .93 .05	53 59 54	.99 .01 .03 .00 .78	.02 7 .93 6 .90 6 .04 5	8
Oswego Palestine Pensacola Philadelphia Pike's Peak	30 25	87 13	533	9.62 $0.16$ $0.02$	0.09 0.20 0.19 0.16	45 52	.13	.09 .13 .16 .13	51 57	.62 .51 .07 .89	.00 .07 .10 .02		.44 .01 .86	.99 .99 .04 .99	66 67	.62 .44 .99 .89 .79	.99 .99 .02 .02		.60 .45 .00 .87	.96 6 .99 7 .03 8 .00 7	9
Pittsburg , Poplar River Port Huron Portland, Me. Portland,Ore	43 30	82 26	639	9.36 $9.93$	0.15 0.18 0.10 0.05 0.09	-2 20 23	.35	.13 .17 .08 .01	23 26	.10 .87 .29 .81 .95	.04 .08 .02 .92 .04	38 26 27 32 47	.08 .82 .28 .81	.00 .98 .99 .92 .05	41 41 44	.10 .79 .29 .86 .96	.00 .89 .98 .97	54 53 55	.10 .77 .28 .83	.99 7 .84 6 .96 6 .94 6	10 13
Prescott Red Bluff RioGrande C'y Rochester Roseburg	43 8	77 42	621	$9.96 \\ 9.38$	0.15 0.15 0.21 0.09 0.13	56 23	.89	.11 .14 .09 .11	38 48 63 25 41	.70 .68 .82 .30	.06 .05 .06 .00	43 55 69 29 47	.67 .65 .74 .30	.97 .01 .98 .99	76 42	.69 .59 .73 .32 .51	.91 .95 .97 .98 .06	80 57	.73 .54 .75 .30 .51	.87 6 .00 7 .99 8 .96 6 .06 6	
Sacramento St. Louis St. Paul St. Vincent Salt Lake City	38 38	90 12	831	9.53 $9.16$ $9.21$	0.14 0.16 0.13 0.18 0.25	9 -7	.50 .14 .22	.11 .13 .10 .18 .20	35 16 0	.99 .44 .11 .19 .62	.06 .06 .04 .12	55 43 28 14 41		.02 .97 .95 .02 .00	35	.89 .37 .03 .08	.96 .96 .91 .94	66 59 53	.84 .37 .03 .04	.91 6 .96 7 .90 6 .89 6	5
San Antonio San Diego Sandusky San Francisco Santa Fe	29 27 32 43 41 25 37 48 35 41	98 28 117 10 82 40 122 26 105 57	781 67 629 60 7026	0.03 9.40 0.07	0.17 0.10 0.12 0.13 0.17	54 26 50		.12 .09 .10 .10	54 29 51	.22 .00 .33 .02 .21	.05 .07 .04 .08 .02	62 56 34 53 39	.31	.03	46 54	.13 .91 .32 .94 .26	.95 .98 .00 .00	57	.14 .88 .31 .90 .32	.95 8 .95 6 .98 6 .96 5 .89 6	H
Savannah Shreveport Sill Spokane Springfield, Ill	32 30	93 40	249 1200 1909	9.93	0.20 0.19 0.17 0.11 0.17	45 34	.07 .88 .84 .99 .42	.17 .13 .11 .11	41	.00 .81 .78 .96 .36	.10 .06 .03 .02 .06	58 50 40	.70	.98	67 61 47	.94 .74 .69 .95	.04 .98 .92 .95	74 69 56	.95 .75 .71 .94 .30	.04 8 .99 8 .93 7 .92 6 .97 7	51
Springfield,Mo Sully Toledo Vicksburg Washington	32 22	83 34	673 222	8.35 9.38 9.95	$\begin{array}{c} 0.17 \\ 0.20 \\ 0.11 \\ 0.19 \\ 0.18 \end{array}$	8 25 47	.63 .34 .37 .91 .02	.13 .17 .09 .15	15 29 54	.59 .31 .30 .84 .92	.06 .09 .02 .08	44 29 34 58 40	.54 .26 .28 .78 .87	.98 .99 .98 .01	45 47 66	.55 .21 .29 .77 .91	.97 .89 .98 .00	73	.57 .21 .28 .79 .89	.97 7 .86 6 .96 6 .02 7 .01 7	58 58 71
Wilmington Winnemucca 700d's Holl nkton ma	40 58	117 43 70 40	4344 35	5.66 0.04 8.78	0.17 0.20 0.08 0.20 0.08	30 29 13	.76	.14 .15 .04 .16 .05	32 31 18	.00 .61 .91 .72 .84	.05 .06 .95 .09	54 41 34 30 64		.01 .98 .92 .97	45 46	.97 .57 .96 .62	.02 .93 .00 .92	60	.98 .58 .92 .62	.03 7 .88 6 .96 6 .90 6	64

## MONTHLY NORMAL PRESSURE (15 YEARS) AND TEMPERATURE (8 YEARS).

	J	uly.		Au	gus	t.	8	ept	S	Oct	tobe	r.		ov.		1	ec.		Y	ear	
Station.	December 1	Lressure.	Temp.	Duoconnan	Tessare.	Temp.	0	rressure.	Temp.	Dancisco	ressare.	Temp.	December	Tessure.	Temp.	Ducconner	i resource	Temp.		rressure.	Temp.
	Ob.	Re.		Ob.	Re.		Ob.	Re.		Ob.	Re.		Ob.	Re.		Ob.	Re.		Ob.	Re.	_
Louisville	9.33 $5.62$ $9.23$	0.00 9.93 9.95	78 78 64 65 81	.44 .35 .62 .27 .68	.01 .03 .94 .99	62 62	.50 .41 .59 .27 .73	.08 .09 .00 .99	70 70 51 56 73	.52 .42 .57 .26 .77	.11 .07 .00 .11	59 59 41 45 63	.53 •.43 .53 .26 .79	.13 .14 .12 .01		.55 .44 .49 .26 .82	.17 .16 .18 .03 .18		.48 .38 .53 .26 .73	.07 .08 .03 .00	57 41 40
Milwaukee Mobile Montgomery Moorhead Mt Washington	0.01 9.81 8.95	0.04 0.04 9.91	69 81 81 68 48	.26 .98 .79 .97	.00 .01 .01 .94	80 80 65	.29 .00 .82 .97 .87	.04 .03 .05 .96 .03	55	.28 .05 .87 .98 .74	.04 .08 .10 .00	67 42	.92	.05 .14 .16 .08 .02	55 24	.29 .13 .94 .06 .43	.08 .17 .18 .15	-8	.26 .05 .86 .99 .64	.03 .08 .10 .02	67 65 37
Nashville New Haven New London New Orleans New York	9.85 9.92 9.98	9.97 $9.97$ $0.03$	78 71 71 82 73	.44 .90 .97 .95 .83	.00 .02 .02 .00	69 69 82	.49 .97 .03 .96	.06 .09 .08 .01		.52 .96 .03 .01 .90	.10 .08 .08 .06	52 54 71	.54 .95 .01 .07 .88	.13 .07 .06 .12 .08		,56 .96 .02 .09	.16 .09 .07 .14	40 31 33 55 34	.48 .92 .98 .01 .85	.06 .04 .03 .06 .05	49 50 69
Nortolk Northfield North Platte Olympia Omaha	9.03 $7.09$ $0.02$	$9.94 \\ 9.94 \\ 0.06$	79 70 73 62 76	.10	.02 .98 .96 .02	71 62	.06 .13 .11 .00 .86	.09 .05 .01 .04 .03		.11	.11 .04 .07 .06 .08		.11	.12 .04 .16 .07	35 34	.11 .06 .10 .00	.14 .05 .20 .04	43 23 25 41 24	.04 .05 .07 .00	.07 .01 .05 .04	43 47 50
Oswego Palestine Pensacola Philadelphia Pike's Peak	9.49 $0.02$ $9.86$	9.03 $0.05$ $9.99$	81	.64 .47 .98 .90	.00 .01 .01 .03	80 81	.70 .50 .00 .97	.06 .05 .03	75 78	.69 .54 .05 .98 .81	.06 .09 .08	66 70		.05 .15 .13	59	.68 .60 .14 .99	.06 .17 .16 .13	29 49 51 35 7	.65 .52 .05 .93 .76	.02 .08 .08 .06	65
Pittsburg Poplar River Port Huron Portland, Me Portland, Ore	7.82 9.29 9.81	9.87 $9.96$ $9.92$	69	.32	.02 .91 .99 .98	66 67 67	.19 .85 .36 .94	.04	55 61 60		.09 .02 .05 .04	50	.34	.11 .09 .05 .01	43 24 36 39 44	.18 .89 .34 .90	.13 .19 .07 .02 .08	34 6 26 29 42	.14 .84 .32 .87 .97	.05 .01 .02 .98	37 45 47
Prescott	9.52 9.77 9.30	9.87 $0.00$ $9.95$	69	.75	.90 .86 .99 .00	80 84 67	.77 .56 .78 .39 .49	.02	81 62	.66 .86 .39		62 74		.11 .12 .16 .05 .14	38	.74 .77 .93 .36	.13 .14 .18 .06 .12	28	.74 .65 .82 .34 .52	.01 .01 .06 .02	$\frac{62}{74}$ $\frac{46}{46}$
Sacramento St Louis St. Paul St. Vincent Salt Lake City	9.41	9.99	79	.41 .08	.87 .99 .95 .93	77 69 62	.87 .46 .09 .09	.97	70 59 53	.48 .10	.00	48	.50 .11 .17	.10 .12 .04 .09 .23	30 20	.06 .52 .14 .20 .71	.13 .15 .09 .15 .24	5		.01 .06 .99 .02	55 43 33
San Antonio San Diego Sandusky San Francisco Santa Fe	9.88	9.95	67 73 50	.85 .34 .88	.98 .92 .01 .94	69 70 58	.89	.92 .06	66	.92 .39	.08	54 54 58	.98 .37 .04	.13 .05 .07 .10	58 40 55	.39	.15 .08 .10 .12	30 52	.94	.04 .01 .05 .03 .02	60 49 56
avannahhreveport ili Pokane Pringfield, Ill	9.96	0.05	82	.76 .76 .94	.98	82 80 67	.80	.04	76 73 57	.85		66 61 46	.89 .86 .05	.14	54 48 35	.91 .87 .02	.18 .16 .14 .12 .15	48 40 30	.82	.10 .07 .02 .02	65 60 47
Pringfield, Mo ully Oledo Icksburg ashington	8.60 8.27 9.30	9.99 9.91 9.98	76 73 74	.32	.00 .94 .00 .02	68 70 80	.36 .36	.99 .05	57 65 75	.31 .36 .88	.11	46 53 67	.34 .35 .92	.12 .11 .06 .16	30 40 55	.36 .37 .94	.15 .17 .09 .18	18 30 50	.30 .33 .85	.09	43 50 65
ilmington innemucca Ood's Holl ankton	9.98 5.61 9.93	0.03 9.85 9.97	80 72 70	.97 .60 .96	.02 .86 .00 .95	70 68 71	.69	.95 .07 .98	60 63 62	.66 .01 .71	.05	47 54 50	.69 .01 .74		35 45 33	.69 .01	.05	33 34 20	.62 .97	.02	49

TABLE XLV.-NORMAL WIND DIRECTION.

Station.   Jan.   Feb.   March   April.   May.   June.   Jally.   Aug.   Sept.   Oct.   Nov.   Dec.   Year   Ablelen   Ablelen   Sept.   Sep	.		:	TA	BLE XLV	N.	ORMAL W	IND	DIRECTION	ON.				
9.25.W         5.55.W         5.55.W<	Station.	Jan.	Feb.		April.		June.	July.	Aug.	Rept.	Oct.	Nov.	Dec.	Year.
172.W         182.W         182.W <th< td=""><td>Abilene</td><td></td><td>18</td><td>13</td><td>83</td><td>8</td><td>8</td><td>8</td><td>3</td><td>=</td><td>  ജ</td><td>13</td><td>20</td><td>ន</td></th<>	Abilene		18	13	83	8	8	8	3	=	ജ	13	20	ន
1820.W         1820.W         1870.W         1870.W<	Albany		2	8	8	5	22	5	4	5	28	8	92	8
17.24	Alpena		888	3 63	₹\$	g 24	25	24	2	8	98	25	88	62
10.54         N 155 W         10.55 W	Assinaboine		83	8 5	33	35	38	35	3	3	88	8	3 5	32
1757 W         1757 W<	Atlanta		ř,	ä	13	9	77	ş	5	2	2	ĸ	3	8
18.2W         18.2W <th< td=""><td>Atlantic City</td><td></td><td>3</td><td>8</td><td>3</td><td>٤.</td><td>523</td><td>₹=</td><td>3</td><td>3 23</td><td>8</td><td>36</td><td>38</td><td>38</td></th<>	Atlantic City		3	8	3	٤.	523	₹=	3	3 23	8	36	38	38
10.24 W         10.25 W         10.40 W         10.54 W         8.45 W         8.45 W         8.7	Augusta		æ	3	25	श	2	2	æ	8	ଛ	\$	8	8
13.4 W         11.7 W         11.5 C         11.3 C<	Baltimore		26	<del>\$</del> 5	# E	\$ Z	34	೭೩	88	FG 52	38	23 25	\$ 35	¥ 8
0.24 W         0.17 W         0.15 C         0.14 C         0.15 C         0.14 C         0.15 C<			;	;	}	;	:	,		,	!	;	}	
17.56         M 15.74         M 15.24         M 15.74         M 15.24         M 15.74         M 15.24	Bismarck		-	2	ನ!	\$	8;	8	8	= 5	23	æ;	8	4
1536         5870 <th< td=""><td>Bock Island</td><td></td><td>5</td><td>3 :</td><td>ă (</td><td>3</td><td>2 8</td><td>32</td><td>3 2</td><td>38</td><td>8 ह</td><td>3 8</td><td>83</td><td>7</td></th<>	Bock Island		5	3 :	ă (	3	2 8	32	3 2	38	8 ह	3 8	83	7
557 W         568 W         563 W         546 W         546 W         546 W         546 W         546 W         547 W         567 W         577 W         567 W         577 W         567 W         577 W         567 W         577 W         567 W         577 W         567 W         577 W <th< td=""><td>Boston</td><td></td><td>§ 2</td><td>3 2</td><td></td><td>ş</td><td>2</td><td>: :</td><td>9 2</td><td>3 7</td><td>2 8</td><td>38</td><td>38</td><td>8</td></th<>	Boston		§ 2	3 2		ş	2	: :	9 2	3 7	2 8	38	38	8
557W         554W         553W         549W         544W         556W         549W         544W         556W         549W         560W         560W <th< td=""><td>Brownsville</td><td></td><td>82</td><td>33</td><td>23</td><td>\$</td><td>3</td><td>8</td><td>46</td><td>\$</td><td>8</td><td>3</td><td>F</td><td>21</td></th<>	Brownsville		82	33	23	\$	3	8	46	\$	8	3	F	21
15	Buffelo		2	5	5	9	÷	,	9	3	3	2	7	12
118.W         118.W <th< td=""><td>Buford</td><td></td><td>5 =</td><td>38</td><td>3 %</td><td>3 4</td><td>: 8</td><td>Ş</td><td>3 5</td><td>3 4</td><td>3 2</td><td>2 8</td><td>: 8</td><td>2 4</td></th<>	Buford		5 =	38	3 %	3 4	: 8	Ş	3 5	3 4	3 2	2 8	: 8	2 4
11 W         8 70 W         8 65 W         8 70 W         8 66 W         8 66 W         8 66 W         8 66 W         8 67 W <td>Catro</td> <td></td> <td>8</td> <td>\$</td> <td>2</td> <td>ន</td> <td>'n</td> <td>ន</td> <td>1</td> <td>3</td> <td>-</td> <td>2</td> <td>32</td> <td>8</td>	Catro		8	\$	2	ន	'n	ន	1	3	-	2	32	8
D11W         B70W         B70W <th< td=""><td>Cedar Keys</td><td></td><td>17</td><td>2</td><td>3</td><td>82</td><td>8</td><td>8</td><td>æ.</td><td>8</td><td>8</td><td>88</td><td>28</td><td>8</td></th<>	Cedar Keys		17	2	3	82	8	8	æ.	8	8	88	28	8
n11 w         870 w         871 w         850 w         810 w         870 w         870 w         872 w         860 w         872 w         860 w         872 w         860 w         872 w         870 w         872 w         860 w         872 w         870 w         872 w         870 w         872 w         870 w         872 w         860 w         872 w         860 w         872 w         870 w         872 w         870 w         872 w         870 w         870 w         872 w         870 w         870 w         872 w         870 w <th< td=""><td>Charleston</td><td></td><td>8</td><td>S</td><td>2</td><td>4</td><td>16</td><td>7</td><td>4</td><td>5</td><td>8</td><td>2</td><td>\$</td><td>3</td></th<>	Charleston		8	S	2	4	16	7	4	5	8	2	\$	3
W         DRSW         DR	Charlotte		2	53	21	32	5	B	Ð	•	£3	2	73	19
8.55 W         8.17 W         10.0 W         11.0 W<	Chattanooga		<b>22</b> E	8	<b>%</b> 8	25	66	9	8	8	នន	2	8	8
8.55 W         8.77 W         106 W         159 W         8.57 E         8.50 W         8.13 E         8.46 W         8.57 W         8.55 W         17.36 S. 30 E         8.17 W         8.55 W         18.56 W         8.16 E         8.17 W         8.55 W         8.16 W         8.17 W         8.55 W         8.17 W         8.16 W         8.17 W         8.16 W         8.17 W         8.16 W         8.17 W         8.16 W         8.17 W         8.17 W         8.10 W         8.17 W         8.10 W         8.17 W         8.10 W         8.17 W         8.10 W         8.17 W         8.10 W         8.17 W         8.10 W         8.12 W         8.10 W         8.11 W         8.25 W         8.27 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8.20 W         8	Cheyenne		9 2	3 2	38	₹ 8	8 =	25	35	2 2	28	3	<b>=</b> 2	32
8.33 W         8.41 W         8.78 W         n.10 W         n.79 e         8.38 w         8.16 e         8.73 e         8.70 w         8.77 W         8.50 W         8.61 W         8.61 W         8.61 W         8.62 W         8.62 W         8.62 W         8.61 W         8.61 W         8.62 W         8.62 W         8.61 W         8.61 W         8.61 W         8.62 W         8.61 W         8.61 W         8.62 W         8.62 W         8.61 W         8.62 W         8.61 W         8.62 W         8.62 W         8.61 W         8.62 W<	Cincinnati		=	\$	3	218	8	23	:23	\$	3-	8	3 13	8
8.44 W         8.46 W         18.82 W         18.85 W         18.85 W         18.85 W         18.85 W         8.85	Cleveland		41	82	2	23	8	91	73	S		22	15	16
1536         8176         8160         8416         8420         8196         8386         8166         8786 <th< td=""><td>Columbus</td><td></td><td>8</td><td>8</td><td>88</td><td>3</td><td>8</td><td>8</td><td>38</td><td>3</td><td>28</td><td>2</td><td>8</td><td>5</td></th<>	Columbus		8	8	88	3	8	8	38	3	28	2	8	5
8.42 W         8.12 W<	Corpus Christi		£ 6	88	#8	35	23	ĕ;	8	8	200	25	8	8
8.44 W         8.20 W         8.51 W         8.47 W         8.51 W         8.51 W         8.51 W         8.52 W         8.52 W         8.52 W         8.52 W         8.52 W         8.52 W         8.52 W         8.54 W         8.55 W<	Davenport		38	8 ≘	នន	28	3 23	<b>;</b> 9	50	<b>3</b>	£ 83	- 23	38	<b>8</b> 8
\$22 W \$10 W \$47 W \$21 W \$24 W \$25 W	Dowle		ģ	7	4	2	1	3	õ	8	5	2	9	č
8.22 W         8.19 W         847 W         n.21 W         8.46 B         8.26 C         8.48 W         8.66 W         n.64 W         8.48 W         8.48 W         8.66 W         n.64 W         8.48 W         8.42 W         8.42 W         8.42 W         8.42 W         8.42 W         8.41 W         11.64 W         8.32 W         8.71 W         8.72 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.71 W         8.72 W         8.71 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W         8.72 W<	Deadwood		3 🕏	30	8	3	6	38	3	3 =	3 25	38	3 6	3 %
N40W         N 145W         N 154W         N 174C         8 3 1 C         8 3 2 W         8 15 W         8 15 W         N 165W         N 164W         N 164W         N 165W         N 172W         N 165W         N 172W         N 165W         N 172W         N 165W         N 165W<	Denver		2	47	21	4.	8,	တဒို	ea S	8	8	<b>80</b>	8	4
n 60 W         n 48 W         n 60 W         n 15 e         s 44 e         s 35 e         s 37 e         s 25 c         s 41 e         n 52 w         n 16 w         n 16 w         n 16 w         n 16 w         n 16 w         n 16 w         n 16 w         n 17 e         s 14 e         s 38 e         s 37 w         s 25 w         s 52 w         s 52 w         s 52 w         s 52 w         s 52 w         s 72 w         n 16 w         s 77 w         n 16 w         s 77 w         n 76 w         s 77 w         n 77 w         s 77 w         n 77 w         s 77 w         n 77 w         n 77 w         n 77 w         n 17 w<	Des Moines		3	3ء		3 2	- 55	3 5	2 19	\$ 8	88	ž Ş	35	35
N6W         n6W         n15e         84e         85e         85fe         85f			; ;	,	. ;	:	: :	: 8		;	: :	3		?
NETW         11.34         11.04         12.06         17.24         11.34         11.34         11.04         12.04         13.04	Dodge City	2 E	\$ 8	5	25	\$ 3	8.	88	58	នន	4 :	22 5	<b>\$</b> 5	3:
n 67 w         n 52 w         n 33 w         n 20 w         s 25 w         s 19 w         s 23 w         s 32 w         s 44 w         s 88 w         n 60 w<	Duluth	n 87	3	32	នេះ	: 3	, ≃	3 2	300	38	38	25	2 2	:
1100 W 11/0 6 8/34 6 8/02 6 8/30 6 8/30 8 8/30 8 8/30 11/00 W 11/10 8/30	Eastport	n 57	2	23	8;	8	25	8	88	48	88	8	2	8
	Ellote	8	2	22	\$	3	8	3	3	ŝ	6	8	7	8

XLV.-NORMAL WIND DIRECTION.

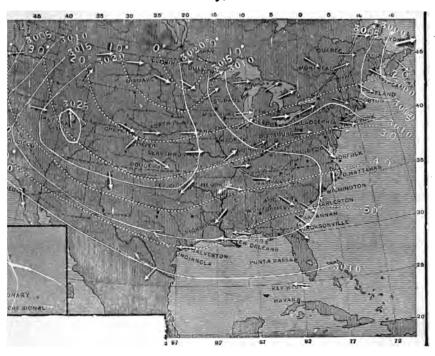
Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
El Paso.	100	12	15	79	76	3	38	82	26	22	37	67	62
Erie		8	85	8	57	7	20	16	13	27	46	47	48
Escanaba	35	29	14	Ξ	67	2	45	9	3	20	8	4	8
Ft, Smith	n 60 e	n 59 e	n 71 e	8 76 e	8 48 e	s 12 e	8 8 2 50 0 0	s 50 6	s 65 e	8 83 6	n 74 e	n 87 e	s 69 e
Tropical management	3			3							ķ		
Grand Haven		48	7	*	43	42	20	49	8 16 W	57	67	8	33
Grant	40	10	21	200	4	8	3	5	23	38	8	25	- 8
Hatteras	n 11 w	n se	D 22 e	nase	8 66 e	S 16	8 50 W	8 31 e		n 32 e	n 4 e	n 16 W	B 28 6
пејепа	11 14 W	3	#	8	10	9	3	-	3	1	8	3	3
Indianapolis	8 61 W	18	27	23	38	23	02	22	28	30	80	8 63 W	28
Jacksonville	30	27	55	53	20	88	9	45	89	32	9	53	81
Keokuk	28	52	55	n 55 e	8 38 e	*	-	S 41 6		8 43 W	8 88 W		23
Kev West	20	99	16	87	85	8	F	20	88	8	to	23	18
Knoxville	n 39 w	n 54 w	n 60 w	2		8 76 W	n 81 w	п	8	81	7	8	n 20 w
Co Cwoden	×	100	25	86	78	26	42	35		4	22	8	12
and draining	200	- 10	3	100	1	12	47	71	-	8	24	100	7
avenworth		30	4	99	33	m	8	24	40	s 15 e		n 47 w	-
Little Rock	000	15	4	25	45	-	25	87	85	99	73	83	15
os Angeles	n 36 e	n 38 e	N 29 U	w 68 8	n 86 w	s 72 w	8 76 W	8 83 W	8 80 W	×	n 3 w		n 87 w
- months	5	00	10	92		16	8	100	36	48	65	8	5
shehburg.		3 2	62	200	43	40	22	99	26	89	80	81	
Maginnis	12	8	8	69	200	48	20	38	9	45	49	7	21
Marguette	198	2	n 36 w	п 33 м	n 46 w	n 64 w	n 81 w	n 86 w	8 73 W	8 78 W	8 82 W	8 80 W	n 82 w
Memphis	n 68 W	n 23 w		16	=	5	8	41	10	67	11	20	11
eilwankee.		8	8	83	99	100	19	6	B	12	89	88	87
Cobile	00	-	33		¢4	119	36	35	41	2	*	1	10
Ontgomery	n 12 w		8 65 W	8 46 W	8 21 e	8 2 W	8 29 W	8 88 e	n 55 e	n 42 e	n 21 e	n 5 w	n 62 e
Corhead	20	35	12	24	8	30	20	28	28	3	69	81	
Mt. Washington	20	23	13	48	23	25	5	26	19	8	10	20	22
shville	98	8	76	40	36	89	83	6	13	2	20	82	8
Now Haven		38	33	27	37	33	10	9	83	13	23	4	19
New London	n 50	荔	49	#	99	96	3	5	67	280	25	2	67
w Orleans	n 46 e	n 73 e	s 50 e	8 35 6	8 48 6	8 62 6	N S C	8 57 6	n 69 6	n 53 e	n 49 e	n 53 e	8 85 e
Now York	n 65	19	60	8	5	3	8	35	2	8	*	1	3
rorfolk	n 24	=	n 20 w	25	35	1-	8 14 W	s 30 e	8 85 e	n 62 e	n 10 w	n 44 w	68
Northfield	4	67	8	33	20	2	20	*	-	20	8	-	38
North Platte		n 70 w		n 22 e	8 81 e	S 71 6	3 2				_		n 29 w
Clympia	100	9	30	900	32	40	3 2	200	9-	200	200	- 10	30
The state of the s												2	

### XLV.-NORMAL WIND DIRECTION.

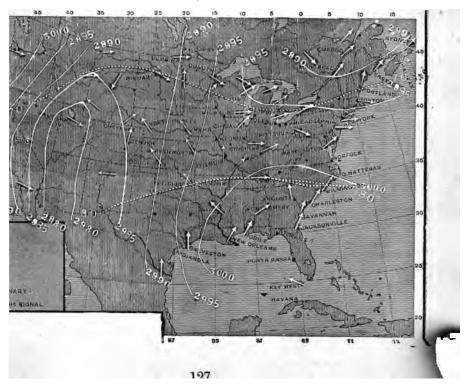
Station					XLV.	NORMAL	F WIND	DIRECTION	FION.						
2.2. W         3.2. W<	Station.	Jan.	Feb.	March.	April.	May.	June.	July.		Mept.	Oct.	Nov.	Dec.	Year.	
175 W   175	Oswego	82 =	£ 5	2 2	12.8	28	52	27	23	85	88	₹ .	្នៃ	13.5	_
18   18   18   18   18   18   18   18	Pensacola	:6	8	2 2 3	œ	888	;≃;	3	<b>3</b>	2	88	ξ;	8	3 58	
9.836 W         11.20 W         11.60 W         11.20 W         11.60 W         11.20 W         11.60 W <t< td=""><td>Finladelpina</td><td></td><td>3,8</td><td>3 5</td><td><b>3</b> 88</td><td>\$ ₹</td><td>33</td><td>₹ 5</td><td>3 38</td><td>38</td><td>₩ 21 52 22 53</td><td>33</td><td>88</td><td>2 æ</td><td></td></t<>	Finladelpina		3,8	3 5	<b>3</b> 88	\$ ₹	33	₹ 5	3 38	38	₩ 21 52 22 53	33	88	2 æ	
138 W   138	Pittsburg	æ	23	8	¥	8	æ	E	3	8	5	8	22	Ε	_
1,50	Poplar River	8 5	88 ¥	8	30	8 5	e. 5	28	5	<u> </u>	3 2	31	왕:	4:	_
10   10   10   10   10   10   10   10	Portland, Me	385	281	282	2 X	588	1212	143	188	:25	388	575	:89	: 52 3	_
3.57 W         3.47 W         3.22 W         3.22 W         3.24 W         3.27 W         3.27 W         3.47 W         3.22 W         3.22 W         3.27 W<	1 Of Mailly, Of Commission	2		2	3	3	5	8	ŝ	3	ì	2	3	ş	
10,20	Prescott	8	€.	នាទ	81:	83 8	83 9	27	81 9	8:	91	9	5	Ži i	
5 670 W         5 850 W <t< td=""><td>Rio Grande City</td><td>* #</td><td>٦ţ:</td><td>Z (*</td><td>3 5</td><td>83</td><td>23</td><td>#8</td><td>ಿತ</td><td>2</td><td>38</td><td>5</td><td>5 الا</td><td>i i</td><td>_</td></t<>	Rio Grande City	* #	٦ţ:	Z (*	3 5	83	23	#8	ಿತ	2	38	5	5 الا	i i	_
3.57W         3.57W <th< td=""><td>Rochester</td><td>3</td><td>25</td><td>뜐:</td><td>[= 8</td><td>≱á</td><td>36</td><td><b>£</b> :</td><td>ဗ္ဗ</td><td>5</td><td>3</td><td><u>ا</u>قا</td><td>€.</td><td>12</td><td>_</td></th<>	Rochester	3	25	뜐:	[= 8	≱á	36	<b>£</b> :	ဗ္ဗ	5	3	<u>ا</u> قا	€.	12	_
1130e         1142 W         \$ 18 W         \$ 38 W         \$ 134 W         \$ 15 W         \$ 10 W         \$ 25 W         \$ 10 W         \$ 14 W         \$ 15 W         \$ 10 W         \$ 15 W         \$ 10 W         \$ 14 W         \$ 15 W<	Kosepurk	٥	Ř	<u> </u>	3.	È	ŧ	ç	Ŷ	ê	=	3	*	4	_
8 776 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1157 W         1158 W	Sacramento	ş,	3	28	8	#	æ	5	2	83	8	+	\$	<b>±</b>	_
150	St. Louis	25	56	8 8	- 9	31	9-	٦;	¥7	31 :	? ?	3	۵ i	7	
1150c         DIGG         575c         872c         878c         878c         878c         DIGG         STR         STR         STR         STR         STR         DIGG         DIG	St. Vincent.	3 13	28	38	3	3	<b>"</b>	7 æ	, 8	12	ź	3 8	3	3 2	_
11.50   11.5	Salt Lake City	12	<b>\$</b>	#	캙	7	Ş	댦	ž	97	¥	3	Ξ	35	_
10         5 W         11 SW         11 S	San Antonio	8	E	13	61	ß	ç	85	き	×	ť	8	Z	9	_
10	San Diego	ro i	8	28	ដូន	3	ž	Ž į	21 8	3	8	ភូរ	2	15	_
1.56 W   1.57 W   1	Sandusky	3 =	3 5	3	33	<b>9</b> (	n E	3	2 2	5 5	⊋ į?	3	9	ic i	
12   12   13   14   15   15   15   15   15   15   15	Santa Fe	7	<b>.</b>	12	3	:	3	2	₹	3	3	9	į o	2	_
11.22	Savannah	2	5	8	31	ţ-	9	1	t-	3	8	Ş	12	5	
112 W	Shreveport	য়	9	줎	6	ă	=	3	3	၁	œ	8	2	7	
8 76 W         8 75 W<	gill	53 F	812	<u> </u>	5	43	i 3	‡ 5	3 5	3 8	\$ £	F 3	23 5	ž!	_
N	gpringfield, Ill	29	9	:8	ន	-	2	3	8	t-	ន	ま	3	; ≄	-
S 51 W         S 57 W         D 81 W         D 81 W         S 64 W         S 67 W         S 67 W         S 65 W         S 67 W<	gully	R	œ	5	8	85	2	28	8	7	7	S	27	ನ	_
1534   1534	Toledo	2	S	æ 8	28	58	<b>\$</b> ;	ず	5	<b>19</b>	<b>\$</b> ;	23	2	E	_
134 w         102 w         8 (5 w         8 38 w         8 9 w         8 22 w         8 36 w <td>Vicksburg</td> <td>38</td> <td>58</td> <td>32</td> <td>ಷಣ</td> <td>88</td> <td>ಚ≗</td> <td>4 B</td> <td>ž</td> <td>2 8</td> <td>\$ 22</td> <td>Z 33</td> <td>58</td> <td>2 3</td> <td>_</td>	Vicksburg	38	58	32	ಷಣ	88	ಚ≗	4 B	ž	2 8	\$ 22	Z 33	58	2 3	_
15.5 W 15	Wilmington	7	2	Ę	8	0	8	Ş	•	F	•	-	8	:	_
DESW   DOW   DOSW   DT4W   S D2W   S 41W   S 44W   S 35W   D 84W   D 85W   D	Winnennucca	53	ž	36	82	8	38	38	3	:8	15	ä	8 ≥	2 2	_
1101   1101   1102	Wood's Holl	28	8:	88	7	28	\$	#:	#	S.	\$	2:	2:	£	_
	Yankton	2 5	12	318	7 25	38	និនិ	<u>5</u> -	30	38	84	81-	\$2	88	_

## :N YEARS' NORMAL PRESSURE, TEMPERATURE, AND WIND DIRECTION. (LAMBERT'S FORMULA.)

January.



July.



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